## SEQUENCE LISTING

	Mark Giver Cherr Borcl Stemm	, Jon Welch r, Lorraine ry, Joel nert, Torber mer, Willem null, Jeremy					
<120>	Sub	tilisin Vari	iants				
<130>	1018	31.210-US					
<160>	201						
<170>	Pate	entIn versio	on 3.1				
<210>	1						
<211>	522						
<212>	DNA						
<213>	Art	ificial Sequ	ience				
<220>							
<223>	Synt	thetic					
<400>	1						
	tcaa	gatgggaacg	ggcacgggac	gcacgttgca	gggacgattg	cggctctgga	60
taatga	cgaa	ggtgttgttg	gcgtagcgcc	aaatgcggat	ctatacgccg	ttaaagtgct	120
tagcgc	atct	ggctctggtt	cgattagttc	gattgcccaa	gggcttgaat	ggtctggcga	180
aaacgg	catg	gatattgcca	atttgagtct	tggcagctct	gcaccaagcg	caactcttga	240
acaago	tgtt	aacgcagcga	catctcgtgg	tgtacttgtt	atcgcagcct	ctggtaactc	300
cggcgc	tgga	tccgttggtt	atcctgcacg	ttatgcgaat	gcgatggcag	taggtgcaac	360
tgatca	aaat	aacaaccgtg	caagctcctc	tcaatacggt	gcaggtcttg	atattgtcgc	420
tcctgg	cgta	ggtgttcaaa	gcacatatcc	agggaaccgt	tatgcgagct	tgaatggtac	480
ttcaat	.ggca	actcctcatg	tcgccggcgt	cgccgcacta	gt		522
<212> <213>		ificial Sequ	ience				
<220> <223>	Synt	thetic					
<400>	2						
	_	gatggcaatg	ggcacgggac	gcacgttgca	ggaacagtgg	cagetettaa	60

tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	tttcctagct	ctacacttga	240
gcgtgcagtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtacggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggct	actccacacg	tcgccggcgc	cgccgcacta	gt		522
<220>	ficial Sequ thetic	ıence				
<400> 3	gatgggaatg	ggcacgggac	gcatgtagca	ggaacaatag	ccgctctaaa	60
		gtgttgcacc				120
		gcgttagtgg				180
		acatgagtct				240
		caagccaagg				300
cggttctggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
acctggagtt	aacgtacaaa	gtacgtatcc	aggaaaccgt	tatgtgagta	tgaatggtac	480
atctatggct	actccacacg	tcgccggcgt	cgccgcacta	gt		522
<210> 4 <211> 522 <212> DNA <213> Arti	ficial Sequ	ience				
<220> <223> Synt	hetic					
<400> 4 gtcgactcaa	gatgggaacg	ggcacgggac	gcacgtagca	ggaacggttg	cagctcttaa	60
taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180

gaataacatg o	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttgg	240
gcgtgcagtc a	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt t	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac a	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt a	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
gtcgatggca a	actcctcacg	tcgccggcgt	cgccgcacta	gt		522
<220>	ficial Sequ hetic	nence				
<400> 5			a a a trataga a	gannanatna	angatattan	60
gtcgactcaa q	gatgggaacg	ggcacgggac	geatgtggee	ggaacagtag	Cagetettaa	60
taactcaatc g	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat g	ggtagaggaa	gcgttagtgg	aattgctcga	ggtctagagt	gggctgcagc	180
gaataacatg (	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc a	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt 1	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac a	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt a	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggct a	actccacacg	tcgccggcgt	cgccgcacta	gt		522
<210> 6 <211> 522 <212> DNA <213> Arti:	ficial Sequ	ience	·			
<220> <223> Synth	hetic					
<400> 6 gtcgactcaa g	gatggcaatg	ggcatgggac	gcacgttgca	ggaacgattg	cggcgctaaa	60
caataatgtt 🤉	ggtgtacttg	gtgttgcgcc	taacgttgag	ctttatggtg	ttaaagtact	120
tggagcaagt g	ggttctggat	caatcagtgg	aattgcacaa	gggttgcaat	gggctggtaa	180

---

taatggaa	itg catatagcta	atatgagcct	tggtacttct	gcaccaagcg	caactcttga	240
acaagctg	jtt aacgcagcga	catctcgtgg	tgtacttgtt	atcgcagcct	ctggtaattc	300
tggtgctg	ga tcagttggtt	atcctgcacg	ttacgcgaat	gcgatggctg	taggagcgac	360
tgaccaaa	ac aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
acctggag	jtt aacgtacaaa	gtacgtatcc	aggaaaccgt	tatgtgagta	tgaatggtac	480
atctatgg	gcc actccacacg	tegeeggegt	cgccgcacta	gt		522
<212> D <213> A	, 322 DNA Artificial Sequ Synthetic	ıence				
<400> 7						
	aa gatgggaatg	ggcatgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taattcaa	tc ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaa	at ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataaca	itg catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcag	stc aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccg	gt tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaa	ac accagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accagggg	ıtt aatgtacaaa	gtacgtatcc	aggaaaccgt	tatgtgagta	tgagtggtac	480
atctatgg	cc actccacacg	tegeeggege	cgccgccctt	gt		522
<212> D <213> A <220> <223> S <220>	522	ience				
<222> ( <223> n	(60)(60) n in position (	60 denotes a	an unknown r	nucleotide		
<400> 8 gtcgactc	aa gatgggaacg	ggcacgggac	gcacgttgca	ggaacagtgg	cagctcttan	60

taattcaatc ggtgtgattg gtgtggcacc aagtgctgat ctatacgctg taaaagtact 120 180 tggagcaaat ggtagaggaa gcgttagtgg aattgctcaa ggtctagagt gggctgcagc 240 gaataacatg catattgcta acatgagtct cggtagtgat gcacctagta ctacacttga gcgtgcagtc aactatgcga caagccaagg tgtactagtt attgcagcga ctggtaacaa 300 360 cggttctggt tcagttggct atcctgctcg ttatgcaaac gcaatggctg taggagcgac tgaccaaaac aacagacgtg caaacttttc tcagtatggt acaggaattg acatcgtagc 420 accaggggtt aatgtacaaa gtacgtatcc tggaaaccgt tatgtgagta tgaatggtac 480 522 atctatggcc actccacatg tcgccggcgc cgccgcacta gt <210> 9 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Syntehtic

<400> 9 60 gtcgactcaa gatgggaacg ggcatgggac gcacgtagca ggaacaatag ccgctctaaa 120 caattcagta ggcgtactgg gtgtcgcacc gaatgcagaa ttatatgcag ttaaagtact tggagcaaat ggtagaggaa gcgttagtgg aattgctcaa ggtctagagt gggctgcagc 180 gaataacatg catattgcta acatgagtct cggtagtgat gcacctagta ctacacttga 240 300 gcgtgcagtc aactatgcga caagccaagg tgtactagtt attgcagcga ctggtaacaa eggttetggt teagttgget atectgeteg ttatgceaac geaatggetg taggagegae 360 tgaccaaaac aacagacgtg caaacttttc tcagtatggt acaggaattg acatcgtagc 420 accaggggtt aatgtacaaa gtacgtatcc tggaacccgc tatgcaagtt taaatggtac 480 522 atctatggct actccacacg tcgccggcgc cgccgcacta gt

<210> 10 <211> 522 <212> DNA <213> Artificial Sequence <220>

<223> Synthetic

<400> 10 gtcgactcaa gatgggaacg ggcacgggac gcacgttgct ggaacgattg cggctcttga

taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggct	actccacacg	tcgccggcgc	cgccgcacta	gt		522
<220>	ificial Sequ thetic	ience				
<400> 11						
	gatgggaacg	ggcatgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taactcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggaagcggaa	gtgtaagtgg	gattgctcga	ggtttagagt	gggcggcaac	180
caataacatg	catattgcga	acatgagtct	cggtagtgat	tttcctagct	ctacacttga	240
gcgtgcagtc	aactatgcga	caagccgtga	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagtaggct	atccggcgcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgt	tatgcgagct	tgaatggtac	480
ttcaatggca	actcctcatg	tcgccggcgc	cgccgcacta	gt		522
<220> <223> Synt	ificial Sequ Chetic	1ence				
<400> 12 gtcgactcaa	gatgggaacg	ggcacgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120

tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggtaaccgt	tatgcaagct	taagtggtac	480
gtcaatggct	acgcctcatg	tcgccggcgt	cgccgcacta	gt		522
<220>	ificial Sequ thetic	lence				
<400> 13 gtcgactcaa	gatgggaacg	ggcacgggac	gcacgttgct	ggaacagtgg	cagctcttaa	60
taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	tttcctagct	ctacacttga	240
gcgtgcagtc	aactatgcga	caagtcgtga	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgcg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggct	actccacacg	tegeeggegt	cgccgcacta	gt		522
<220> <223> Synt	ificial Sequ thetic	ience				
<400> 14 gtcgactcaa	gatgggaatg	ggcatgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120

tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactatgcga	caagccgtga	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagct	taagtggtac	480
ttcaatggct	acgcctcacg	tcgccggcgt	cgccgcacta	gt		522
<220>	ificial Sequ Chetic	ıence				
<400> 15	gatgggaacg	ggcatgggac	gcacgttgca	ggaacagtgg	caqctcttaa	60
		gtgtggcacc				120
		gcgttagtgg				180
		acatgagtct				240
gcgtgcagtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taagtggcac	480
ttcaatggca	actcctcatg	tcgccggcgc	cgccgcacta	gt		522
	ificial Sequ	ıence				
<220> <223> Synt	chetic					
<400> 16 gtcgactcaa	gatgggaatg	ggcatgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180

gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
acctggagtt	aacgtacaaa	gtacgtatcc	aggaaaccgt	tatgtgagta	tgaatggtac	480
atcaatggca	acgccacatg	tcgccggcgt	cgccgcacta	gt		522
<220>	ificial Sequ Chetic	ience				
<400> 17	astagassta	ggcatgggac	acatataaca	aggacagtta	caacacttaa	60
						120
taactcagtc	ggagteetgg	gtgtagcgcc	agaggetgae	ctttatgcag	tgaaggtget	
tagcgcatct	ggtgccggtt	cgattagctc	aattgcccaa	gggcttgaat	ggtctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggcc	actccacacg	tegeeggegt	cgccgcacta	gt		522
<210> 18 <211> 522 <212> DNA <213> Arti	ificial Sequ	ıence				
<220> <223> Synt	chetic					
<400> 18 gtcgactcaa	gatgggaatg	ggcacgggac	gcacgtagca	ggaacaatag	ccgctctaaa	60
caattcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180

gaataacat	g catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagt	c aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctgg	t tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaa	c aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
acctggagt	t aacgtacaaa	gtacgtatcc	aggaaaccgt	tatgtgagta	tgaatggtac	480
atctatggo	c actccacacg	tegeeggege	cgccgcacta	gt		522
<210> 19 <211> 52 <212> DN <213> Ar	2	uence				
<220> <223> Sy	nthetic					
<400> 19 gtcgactca	a gatgggaacg	ggcacgggac	gcacgttgct	ggaacgattg	cggctctgga	60
taatgacga	a ggtgttgttg	gcgtagcgcc	aaatgcggat	ctatacgccg	ttaaagtgct	120
tagcgcato	t ggctctggtt	cgattagttc	gattgcccaa	gggcttgaat	ggtctggcga	180
aaacggcat	g gatattgcca	atttgagtct	tggcagctct	gctccaagcg	caacactcga	240
acaagctgt	t aacgcagcaa	catctcgtgg	tgtacttgta	attgctgcat	ctggtaactc	300
cggcgctgg	a tccgttggtt	atcctgcacg	ttatgcgaat	gcgatggcag	tcggcgcaac	360
tgatcaaaa	t aacaaccgcg	caagcttttc	tcaatacggt	gctggtcttg	atattgtcgc	420
tcctggagt	t ggtgttcaaa	gcacatatcc	aggaaaccgt	tatgctagtt	taaatggtac	480
gtcgatggc	a actcctcacg	tcgccggcgc	cgccgcacta	gt		522
<210> 20 <211> 52 <212> DN <213> Ar	2	uence				
<220> <223> Sy	nthetic					
<400> 20	a gatgggaatg	aacacaaac	acacataaca	aaaaaataa	cccctctaaa	60
	a gatgggaatg a ggcgtacttg					120
						180
	t ggaagcggaa					
caataacat	g catattgcga	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240

gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgcg	caaacttttc	tcagtacggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcacgtt	taaatggtac	480
atctatggct	actccacacg	tcgccggcgt	cgccgcacta	gt		522
<220>	ificial Sequ Chetic	ıence				
<400> 21						
gtcgactcaa	gatgggaacg	ggcacgggac	gcatgttgct	ggaacgattg	cggctcttga	60
taactcaatc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggaagcggaa	gtgtaagtgg	gattgctcga	ggtttagagt	gggcggcaac	180
caataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcgaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgcg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
ttcaatggca	actcctcacg	tcgccggcgc	cgccgcacta	gt		522
<220>	ificial Sequ Chetic	ience				
-	Meere					
<400> 22 gtcgactcaa	gatgggaacq	ggcacgggac	gcacgttgct	ggaacgattq	cggctcttga	60
		gcgtagcacc				120
		cgattagctc				180
		atttgagtct				240
addeggeacg	gacactgcca	accegageee	eggeagetet	50000aageg	Jaucettega	240

acaagct	tgtt	aacgcagcga	catctcgtgg	tgtacttgtt	atcgcagcct	ctggtaattc	300
tggtgc	tgga	tcagttggtt	atcctgcacg	ttacgcgaat	gcgatggcag	taggtgcaac	360
tgatca	aaat	aacaaccgtg	caagcttctc	tcaatacggt	gcaggtcttg	atattgtcgc	420
tcctgg	cgta	ggtgttcaaa	gcacataccc	aggttcaaca	tatgccagct	taaacggtac	480
atcgate	ggct	actcctcacg	tegeeggegt	cgccgcacta	gt		522
<210> <211> <212> <213> <220>	23 522 DNA Arti	ificial Sequ	ıence				
<223>	Synt	chetic					
<400> gtcgact	23 tcaa	gatgggaacg	ggcacgggac	gcacgttgca	ggaacaatag	ccgctctaaa	60
caattca	aata	ggcgtacttg	gtgttgcacc	gaatgcagaa	ttatatgctg	ttaaagtact	120
tggagca	aagt	ggttctggat	caatcagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataa	catg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgca	agtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttc	cggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaa	aaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accagg	ggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctate	ggct	actccacatg	tcgccggcgt	cgccgcacta	gt		522
<210><211><211><212><213>	522 DNA	ificial Sequ	ıence				
<220> <223>	Synt	chetic					
<400> gtcgact	24 tcaa	gatgggaacg	ggcacgggac	gcacgttgca	gggacaatcg	ctgctctaaa	60
caattca	aata	ggcgtactgg	gtgtcgcacc	gaatgcagaa	ttatatgcag	ttaaagtact	120
tggtgca	aaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataad	catg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
acatac	artc	aactacgcga	caadccaadd	tatactaatt	attgcagcga	ctggtaacaa	300

cggttctggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacaaccgcg	ctagcttttc	acagtatgga	gctgggcttg	acattgtcgc	420
gccaggtgtc	aatgtgcaga	gcacataccc	aggttcaaca	tatgacagct	taagtggcac	480
ttcaatggca	acgcctcacg	tcgccggcgt	cgccgcacta	gt		522
<220>	ificial Sequ Chetic	ience				
<400> 25 gtcgactcaa	gatgggaatg	ggcacgggac	gcatgtggcc	ggaacagtag	cagctcttaa	60
				ctatacgctg		120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	gggaggtcaa	tacgctgagc	taagcggaac	480
ctcaatggcc	tcaccacacg	tcgccggcgc	cgccgcacta	gt		522
<210> 26 <211> 522 <212> DNA <213> Arti	 ificial Sequ	ience				
<220> <223> Synt	chetic					
<400> 26	gatgggaacg	ggcacgggac	gcatgtggcc	ggaacagtag	cagctctaaa	60
				ttatatgctg		120
				ggtctagagt		180
				gcacctagta		240
				attgcagcga		300
	5 5					

cggttccggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	gaaattgaaa	gcacctaccc	aggaagctct	tatgacagct	taagaggcac	480
ttcaatggca	acgcctcacg	tcgccggcgc	cgccgcacta	gt		522
<210> 27 <211> 522 <212> DNA <213> Arts	ificial Sequ	ıence				
<220> <223> Synt	chetic					
<400> 27 gtcgactcaa	gatgggaacg	ggcacgggac	gcacgttgca	ggaacgattg	cggctctgga	60
taatgacgaa	ggtgttgttg	gcgtagcgcc	aaatgcggat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttccggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggct	actccacatg	tcgccggcgt	cgccgcacta	gt		522
<210> 28 <211> 522 <212> DNA <213> Art:	ificial Sequ	ience		-		: 20
<220> <223> Synt	chetic					
<400> 28 gtcgactcaa	gatggcaatg	ggcacgggac	gcatgtagca	ggaacaatag	ccgctctaaa	60
caattcagta	ggcgtactgg	gtgtcgcacc	gaatgcagat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacatg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagttggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360

tgaccaa	aac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acattgttgc	420
acctggc	gtt	ggcgttcaga	gcacataccc	aggtaaccgt	tatgcaagct	taagtggtac	480
gtcaatg	gcc	tctccgcacg	tcgccggcgt	cgccgcgcta	gt		522
<211> <212> 1	29 522 DNA Arti	ficial Sequ	ience				
<220> <223>	Synt	chetic					
	29 caa	gatgggaacg	ggcacgggac	gcatgtagca	ggaacaatag	ccgctctaaa	60
caattca	ata	ggcgtacttg	gtgttgcacc	gaatgcagaa	ttatatgctg	ttaaagtact	120
tggagca	aat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataac	atg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttaa	240
gcgtgca	gtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttcc	ggt	tcagtaggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360
tgaccaa	aac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggg	gtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatg	gct	actectcatg	ttgcaggtgc	ggccgcacta	gt		522
<211> <212>	30 522 DNA Arti	ificial Sequ	ıence				
<220> <223>	Synt	chetic					
	30 caa	gatgggaacg	ggcacgggac	gcacgttgct	ggaacgattg	cggctcttaa	60
taattca	atc	ggtgtgattg	gtgtggcacc	gaatgctgac	ttatatgctg	ttaaagtact	120
cggagca	aat	ggaagcggaa	gtgtaagtgg	gattgctcga	ggtttagagt	gggcggcaac	180
caataac	atg	catattgcga	acatgagtct	cggtagtgat	tttcctagct	ctacacttga	240
gcgtgca	gtc	aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttct	ggt	tcagttggct	atcctgctcg	ttatgccaac	gcaatggctg	taggagcgac	360

tgaccaaaa	c aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
ttcaatggca	a actcctcacg	tegeeggegt	cgccgcacta	gt		522
<210> 31 <211> 522 <212> DNA <213> Art		uence				
<220> <223> Syr	nthetic					
<400> 31 gtcgactcaa	a gatgggaacg	ggcacgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taactcaato	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagcaaat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataacat	g catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgcagt	c aactatgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttctggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaaaa	c aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggggtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatggca	a actecteacg	tegeeggegt	cgccgcacta	gt		522
<210> 32 <211> 522 <212> DNA <213> Art		uence				
<220> <223> Syn	nthetic					
<400> 32 gtcgactcaa	a gatgggaacg	ggcacgggac	gcacgttgct	ggaacgattg	cggctcttga	60
taacgatgaa	a ggcgttgttg	gcgtagcacc	aaatgccgat	ctttacgcag	ttaaggtgct	120
tagcgcatct	ggtgccggtt	cgattagctc	aattgcccaa	gggcttgaat	ggtctggcga	180
aaacggcat	g gatattgcca	atttgagtct	tggcagctct	gctccaagcg	caactcttga	240
acaagctgt	aacgcagcga	catctcgtgg	tgtacttgtt	atcgcagcct	ctggtaattc	300
tggtgctgga	a tcagttggtt	atcctgcacg	ttacgcgaat	gcgatggcag	taggtgcaac	360
toatcaaaat	aacaaccoto	caacettete	tcaataccct	acaaatetta	atattotoo	420

tcctggcgta ggtgttcaaa gcacataccc aggttcaaca tatgccagct taa	aacggtac 480
atcgatggct actcctcacg tcgccggcgt cgccgcacta gt	522
<210> 33 <211> 522 <212> DNA <213> Artificial Sequence	
<220> <223> Synthetic	
<400> 33 gtcgactcaa gatggcaatg ggcatgggac gcacgttgca ggaacgattg cgg	gcgctaaa 60
caataatgtt ggtgtacttg gtgttgcgcc taacgttgag ctttatggtg tta	aaagtact 120
tggagcaagt ggttctggat caatcagtgg aattgcacaa gggttgcaat ggg	gctggtaa 180
taatggaatg catatagcta atatgagcct tggtacttct gcaccaagcg caa	actcttga 240
acaagctgtt aacgcagcga catctcgtgg tgtacttgtt atcgcagcct ctg	ggtaattc 300
tggtgctgga tcagttggtt atcctgcacg ttacgcgaat gcgatggctg tag	ggagcgac 360
tgaccaaaac aacagacgtg caaacttttc tcagtatggt acaggaattg aca	atcgtagc 420
acctggagtt aacgtacaaa gtacgtatcc aggaaaccgt tatgtgagta tga	aatggtac 480
atctatggcc actccacacg tcgccggcgt cgccgcacta gt	522
<210> 34 <211> 522 <212> DNA <213> Artificial Sequence	
<220> <223> Synthetic	
<400> 34 gtcgactcaa gatgggaatg ggcatgggac gcacgttgca ggaacagtgg cag	gctcttaa 60
taattcaatc ggtgtgattg gtgtggcacc aagtgctgat ctatacgctg taa	aaagtact 120
tggagcaaat ggtagaggaa gcgttagtgg aattgctcaa ggtctagagt ggg	gctgcagc 180
gaataacatg catattgcta acatgagtct cggtagtgat gcacctagta cta	acacttga 240
gcgtgcagtc aactacgcga caagccaagg tgtactagtt attgcagcga ctg	ggtaacaa 300
cggttccggt tcagttggct atcctgctcg ttatgcaaac gcaatggctg tag	ggagcgac 360
tgaccaaaac aacagacgtg caaacttttc tcagtatggt acaggaattg aca	atcgtagc 420

accaggg	gtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
atctatg	gct	actccacacg	tcgccggcgt	cgccgcacta	gt		522
<210><211><211><212><213>	35 522 DNA Arti	ificial Sequ	uence				
<220> <223>	Synt	chetic					
<400>	35						
gtcgact	caa	gatgggaatg	ggcatgggac	gcacgttgca	ggaacagtgg	cagctcttaa	60
taattca	atc	ggtgtgattg	gtgtggcacc	aagtgctgat	ctatacgctg	taaaagtact	120
tggagca	aat	ggtagaggaa	gcgttagtgg	aattgctcaa	ggtctagagt	gggctgcagc	180
gaataac	atg	catattgcta	acatgagtct	cggtagtgat	gcacctagta	ctacacttga	240
gcgtgca	gtc	aactacgcga	caagccaagg	tgtactagtt	attgcagcga	ctggtaacaa	300
cggttcc	ggt	tcagtaggct	atcctgctcg	ttatgcaaac	gcaatggctg	taggagcgac	360
tgaccaa	aac	aacagacgtg	caaacttttc	tcagtatggt	acaggaattg	acatcgtagc	420
accaggg	gtt	aatgtacaaa	gtacgtatcc	tggaaaccgc	tatgcaagtt	taaatggtac	480
ttcaatg	gca	actcctcacg	tcgccggcgt	cgccgcacta	gt		522
	36 522 DNA Arti	ificial Sequ	lence				
<220>· <223>	Synt	chetic	-				
<400> gtcgaca	36 icaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	gat	ggcgttcttg	gcgttgcacc	gaacgttgat	ctgtatgcag	ttaaagttct	120
gggcgca	aac	ggcagaggct	caatttcagg	cattgcacgg	ggcctgcaat	gggcagcaga	180
taatggc	acg	catgttgcaa	atctgtcact	gggcacagat	caaccgtcaa	caacactgga	240
acgggca	gtt	aattatgcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatac	300
cggctca	ggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caaacttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggc	gtt	aatgtccaat	caacatatcc	gggcaacaca	tacgtttcac	tgaacggcac	480

atcaato	ggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210><211><211><212><213>	37 522 DNA Arti	ficial Sequ	ience				
<220> <223>	Synt	hetic					
<400> gtcgaca	37 acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatago	gtt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatgcag	ttaaagttct	120
gggcgca	aaac	ggcagaggct	caatttcagg	cattgcacag	ggcctggaat	gggcaggagc	180
aaatggo	catg	catattgcaa	atatgtcact	gggcacatct	gcaccgtcat	caacactgga	240
acgggca	agtt	aattcagcag	catcacgggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggcgca	aggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aatagaagag	caaacttttc	acaatatggc	gcaggccttg	acattgttgc	420
accggg	gtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaato	ggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210><211><211><212><213>	38 522 DNA Arti	ficial sequ	ience				
<220> <223>	Synt	hetic			·		
<400> gtcgaca		gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatago	gat	ggcgttattg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgca	aaac	ggcagaggct	caatttcagg	cattgcacgg	ggcttggaat	gggcagcaaa	180
taatggo	atg	catgttgcaa	atatgtcact	gggcacagat	caaccgtcag	caacactgga	240
acgggca	agtt	aatcaagcaa	catcacaggg	cgttctggtt	attgcagcaa	caggcaataa	300
cggctca	aggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accqqqq	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatqcttcac	tgaacggcac	480

atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 39 <211> 522 <212> DNA <213> Art		ıence				
<220> <223> Syn	thetic					
<400> 39 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataacatt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagaggct	caatttcagg	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcatt	gggcacagat	caaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	catcacaggg	cgttctggtt	attgcagcaa	caggcaatag	300
cggctcaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagctcttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgtttcac	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 40 <211> 522 <212> DNA <213> Art		1ence				
<220> <223> Syn	thetic		,			
<400> 40						
	gatggcaatg					60
taataacatt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcagg	cattgctcgg	ggcctgcaat	ggacagcaga	180
taatggcatg	catattgcaa	atctgtcact	gggctcatct	tcaccgtcag	caacactgga	240
acgggcagtt	aattatgcaa	catcacgggg	cgttctggtt	attgcagcaa	caggcaatac	300
cggcgcaggc	acaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522

<210><211><212><213>	41 522 DNA Arti	ficial Sequ	ience				
<220> <223>	Synt	chetic					
<400>	41						
gtcgaca	caa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatago	att	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatggag	ttaaagttct	120
gggcgca	agc	ggcagaggct	caatttcaag	cattgcacgg	ggcctgcaat	gggcagcaga	180
taatggo	catg	catgttgcaa	atctgtcact	gggctcagat	tttccgtcag	caacactgga	240
acgggca	agtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgca	aggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aataatagag	caagcttttc	acattatggc	gcaggccttg	atattgttgc	420
accggg	gtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgcttcac	tgaacggcac	480
atcaato	ggca	accccgcatg	ttgcaggcgt	tgctgcacta	gt		522
<210><211><211><212><213>	42 522 DNA Arti	ificial Sequ	ience				
<220> <223>	Synt	thetic					
<400>	42	4.		•			
gtcgaca	acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	gtt	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatgcag	ttaaagttct	120
gggcgca	aagc	ggcagaggct	cagtttcaag	cattgcacag	ggcctggaat	gggcagcaac	180
taataat	atg	catgttgcaa	atctgtcact	gggctcatct	caaccgtcat	caacactgga	240
acaggca	agtg	aatgcagcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaataa	300
cggctca	aggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aataatagag	caagcttttc	acattatggc	acaggccttg	atattgttgc	420
accggg	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgaacggcac	480
atcasto	7002	taaccacata	ttacaaacat	tacaacacta	at.		522

```
<210> 43
<211> 522
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<400> 43
gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa
                                                                      60
taatagegtt ggegttettg gegttgcace gagegetgaa etgtatgeag ttaaagttet
                                                                     120
                                                                     180
qqqcqcaaqc qqcaqaqqca caqtttcagq cattqcacqq ggcctgcaat gggcagcaga
                                                                     240
taatggcatg catgttgcaa atctgtcact gggcacacct caaccgtcag caacactgga
                                                                     300
acgggcagtt aatcaagcaa catcacgggg cgttctggtt attgcagcat caggcaatac
                                                                     360
cggctcaggc acagttagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac
                                                                     420
agatcaaaat aatagaagag caaacttttc acaatatggc gcaggccttg atattgttgc
accgggcgtt ggcgttcaat caacatatcg gggcagcaca tatgcctcac tgagcggcac
                                                                     480
                                                                     522
atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt
<210> 44
<211> 522
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<400> 44
gtogacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa
                                                                      60
taatagcgtt ggcgttcttg gcgttgcacc gaacgctgat ctgtatggag ttaaagttct
                                                                     120
gggcgcaagc ggcagaggca caatttcaag cattgcacgg ggcctggaat gggcaggagc
                                                                     180
                                                                     240
aaatggcatg catgttgcaa atctgtcact gggcacatct tcaccgtcat caacactgga
                                                                     300
acaggcagtt aatcaagcaa catcacgggg cgttctggtt gttgcagcat caggcaatac
                                                                     360
cggctcaggc acagttagct atccggcaac atatgcaaat gcaatggcag ttggcgcaac
                                                                     420
agatcaaaat aataatagag caaacttttc acaatatggc accggccttg atattgttgc
                                                                     480
accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgcttctc tgaacggcac
                                                                     522
atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt
```

<210><211><212><213>	45 522 DNA Arti	ficial Sequ	uence				
<220> <223>	Synt	chetic					
<400>	45						
gtcgaca	caa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataac	gtt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatggag	ttaaagttct	120
gggcgca	agc	ggcagcggct	caatttcagg	cattgcacgg	ggcctggaat	gggcagcagc	180
aaatggo	atg	catgttgcaa	atatgtcact	gggcacacct	tttccgtcag	caacactgga	240
acaggca	gtt	aaagcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgca	iggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caagcttttc	acaatatggc	acaggcattg	atattgttgc	420
accgggc	gtt	ggcgttaaat	caacatatcc	gggcagcaca	tatgtttcac	tgagcggcac	480
atcaatg	gca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>		ficial Sequ	nence				
<400>		hetic					
	46	chetic					
gtcgaca	46 icag		gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
	cag	gatggcaatg	•	**		cagcactgaa ttaaagttct	
taataac	gtt	gatggcaatg ggcgttcttg	•	gagcgctgaa	ctgtacgcag	ttaaagttct	
taataac gggcgca	gtt aac	gatggcaatg ggcgttcttg ggcagcggca	gcgttgcacc	gagcgctgaa	ctgtacgcag ggcctggaat	ttaaagttct gggcaggaaa	120
taataac gggcgca taatggc	egtt aaac	gatggcaatg ggcgttcttg ggcagcggca catgttgcaa	gcgttgcacc	gagcgctgaa cattgcacag gggcacagat	ctgtacgcag ggcctggaat caaccgtcag	ttaaagttct gggcaggaaa caacactgga	120 180
taataac gggcgca taatggc acgggca	egtt aac atg	gatggcaatg ggcgttcttg ggcagcggca catgttgcaa aatgcagcaa	gcgttgcacc cagtttcaag atctgtcact	gagcgctgaa cattgcacag gggcacagat cgttctggtt	ctgtacgcag ggcctggaat caaccgtcag gttgcagcat	ttaaagttct gggcaggaaa caacactgga caggcaatac	120 180 240
taataac gggcgca taatggc acgggca	egtt aac atg gtt	gatggcaatg ggcgttcttg ggcagcggca catgttgcaa aatgcagcaa tcagttggct	gcgttgcacc cagtttcaag atctgtcact catcacgggg	gagcgctgaa cattgcacag gggcacagat cgttctggtt atatgcaaat	ctgtacgcag ggcctggaat caaccgtcag gttgcagcat gcaatggcag	ttaaagttct gggcaggaaa caacactgga caggcaatac ttggcgcaac	120 180 240 300
taataac gggcgca taatggc acgggca cggctca agatcaa	egtt aac atg gtt ggt	gatggcaatg ggcgttcttg ggcagcggca catgttgcaa aatgcagcaa tcagttggct aataatagag	gcgttgcacc cagtttcaag atctgtcact catcacgggg atccggcaag	gagcgctgaa cattgcacag gggcacagat cgttctggtt atatgcaaat acaatatggc	ctgtacgcag ggcctggaat caaccgtcag gttgcagcat gcaatggcag gcaggccttg	ttaaagttct gggcaggaaa caacactgga caggcaatac ttggcgcaac atattgttgc	120 180 240 300 360

<210> 47

<211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa 60 taataacatt ggcgttcttg gcgttgcacc gagcgctgaa ctgtatgcag ttaaagttct 120 180 qqqcqcaaqc qqcaqaggct caqtttcaaq tattqcacaq ggcctggaat gggcaggaga 240 taatggcatg catgttgcaa atctgtcact gggctcacct tttccgtcat caacactgga 300 acgggcagtt aatgcagcaa catcacgggg cgttctggtt attgcagcat caggcaatag 360 cggctcaggc tcaattagct atccggcaag atatgcgaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caaactcttc acaatatggc gcaggccttg agattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgtctcaa tgagcggcac 480 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt 522 <210> 48 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 48 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa 60 120 taataacgtt ggcgttattg gcgttgcacc gaacgttgaa ctgtatggag ttaaagttct 180 gggcgcaaac ggcagaggca caatttcaag cattgcacgg ggcctggaat gggcagcaaa taatggcacg catattgcaa atctgtcact gggcacagat caaccgtcag caacactgga 240 acgggcagtt aatcaagcaa catcacaggg cgttctggtt attgcagcat caggcaatag 300 360 cggctcaggc tcagttagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acattatggc acaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgcttcac tgaacggcac 480 522 atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt

<210> 49 <211> 522

<212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 49 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taatagegtt ggegttettg gegttgeace gagegetgat etgtatgeag ttaaagttet 120 gggcgcaagc ggcagaggca cagtttcaag cattgcacgg ggcctggaat gggcagcaga 180 taataatatg catattgcaa atctgtcact gggcacagat caaccgtcag caacactgga 240 acaggcagtt aatgcagcaa catcacaggg cgttctggtt gttgcagcat caggcaataa 300 cggctcaggc tcaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 agatcaaaat aataatagag caagcttttc acaatatggc acaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcaacaca tatgtttcac tgagcggcac 480 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt 522 <210> 50 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 50 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taataacgtt ggcgttattg gcgttgcacc gagcgctgat ctgtatgcag ttaaagttct 120 gggcgcaagc ggcagaggca caatttcagg cattgcacag ggcctggaat gggcaggaga 180 taatggcatg catgttgcaa atctgtcact gggctcagat caaccgtcag caacactgga 240 acaggcagtt aatgcagcaa catcacaggg cgttctggtt gttgcagcat caggcaatag 300 cggctcaggc tcagttggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 agatcaaaat aataatagag caagcttttc acaatatggc caaggccttg atattgttgc 420 accgggcgtt ggcgttcaat cgacatatcc gggcagcaga tatgcttcaa tgagcggcac 480 atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt 522

<sup>&</sup>lt;210> 51 <211> 522

<sup>&</sup>lt;212> DNA

<213>	Arti	ificial Sequ	ience				
<220> <223>	Synt	chetic					
	51 caa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatago	att	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatgcag	ttaaagttct	120
gggcgca	aac	ggcagaggca	cagtttcagg	cattgcacag	ggcctggaat	gggcagcaga	180
taaaggc	atg	catgttgcaa	atctgtcact	gggctcatct	tcaccgtcaa	caacactgga	240
acaggcg	gtt	aatgcagcaa	catcacaggg	cgttctggtt	attgcagcaa	caggcaatag	300
cggcgca	ggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caagcttttc	acaatatggc	caaggccttg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgtttcac	tgagcggcac	480
atcaatg	gca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<212> <213>		ificial Sequ Chetic	ience				
	52 Icaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataac	gat	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgca	agc	ggcagaggca	cagtttcaag	cattgcacga	ggcctggaat	gggcagcaaa	180
taatggc	atg	catgttgcaa	atatgtcact	gggcacacct	gcaccgtcaa	caacactgga	240
acgggca	gtt	aatcaagcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaataa	300
cggctca	ggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aatagaagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaatg	gca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
	53 522 DNA						

<213> Artificial Sequence

<sup>26</sup> 

<220> <223> Synthetic <400> 53 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa taatagcgtt ggcgtttttg gcgttgcacc gagcgttgat ctgtatgcag ttaaagttct 120 180 gggcgcaagc ggcagcggca cagtttcaag cgttgcacag ggcctgcaat gggcaggaga 240 taatggcatg catgttgcaa atctgtcact gggctcagat gcaccgtcag caacactgga 300 acaggcagtt aattcagcaa catcacgggg cgttctggtt gttgcagcat caggcaatac 360 cggcgcaggc acagttggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aatagaagag caaacttttc acaatatggc gcaggccttg atattgttgc 420 480 accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgcttcac tgaacggcac 522 atcaatggca acaccgcatg ttgcaggcgt tgcagcacta gt <210> 54 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 54 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 120 taatagcgtt ggcgttcttg gcgttgcacc gagcgttgaa ctgtatgcag ttaaagttct gggcgcaagc ggcagcggct caatttcagg cattgcacgg ggcctggaat gggcagcaga 180 taataatacg catgttgcaa atctgtcact gggctcagat tttccgtcag caacactgga 240 acgggcagtt aattatgcaa catcacgggg cgttctggtt gttgcagcat caggcaatac 300 360 cggctcaggc acaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 420 agatcaaaat aatagaagag caagcttttc acaatatggc acaggccttg atattgttgc 480 accgggcgtt ggcgttcaat cgacatatcc gggcagcaga tatgcttcac tgaacggcac 522 atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt <210> 55

<211> 522 <212> DNA

<213> Artificial Sequence

<220> <223> Synthetic <400> 55 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taatagcgat ggcgttattg gcgttgcacc gagcgctgaa ctgtatgcag ttaaagttct 120 gggcgcaaac ggcagcggct cagtttcagg cattgcacgg ggcctggaat gggcaggagc 180 240 aaatggcatg catgttgcaa atctgtcact gggcacagat caaccgtcag caacactgga 300 acaggcagtt aatcaagcaa catcacgggg cgttctggtt gttgcagcat caggcaatag 360 cqqctcaqqc acaqttqqct atccqqcaaq atatqcaaat gcaatggcag ttggcgcaac 420 agatcaaaat aataatagag caagcttttc acaatatggc gcaggcattg atattgttgc accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatacttcac tgagcggcac 480 522 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt <210> 56 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 56 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa taataacatt ggcgttattg gcgttgcacc gaacgttgaa ctgtatgcag ttaaagttct 120 gggcgcaagc ggcagcggct cagtttcaag cattgcacgg ggcctgcaat gggcagcaaa 180 taatggcatg catattgcaa-atctgtcact gggctcatct gcaccgtcag caacactgga 240 acgggcagtt aatgcagcaa catcacgggg cgttctggtt gttgcagcat caggcaatag 300 cggcgcaggc tcaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 420 agatcaaaat aataatagag caagcttttc acaatatggc gcaggccttg atattcttgc accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgcttcaa tgagcggcac 480 522 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt <210> 57 <211> 522 <212> DNA <213> Artificial Sequence

<220>

## <223> Synthetic

<400> 57 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taatagcgtt ggcgttcttg gcgttgcacc gagcgctgat ctgtatgcag ttaaagttct 120 gggcgcaagc ggcagaggct cagtttcagg cattgcacag ggtctggaat gggcagcaga 180 240 taatggcatg catgttgcaa atatgtcact gggcacagat tttccgtcag caacactgga acaggcagtt aatgcagcaa catcacggga cgttctggtt gttgcagcaa caggcaatac 300 360 cggctcaggc acagttggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caaacttttc acaatatggc acaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgtttcaa tgagcggcac 480 522 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt

<210> 58

<211> 522

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

## <400> 58

gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa 60 taatagegtt ggegttettg gegttgeace gagegetgat etgtatgeag ttaaagttet 120 gggcgcaagc ggcagaggct cagtttcaag cattgcacgg ggcctggaat gggcagcaaa 180 taatggcatg catgttgcaa atctgtcact gggctcacct tttccgtcat caacactgga 240 acgggcagtt aattatgcaa catcacggga cgttctggtt attgcagcaa caggcaatag 300 cggcgcaggc acagttggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 420 agatcaaaat aataatagag caagctcttc acaatatggc gcaggccttg atattgttgc accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgcttcac tgaacggcac 480 522 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt

<sup>&</sup>lt;210> 59

<sup>&</sup>lt;211> 522

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic

<400>	59						
		gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	ctgcactgaa	60
taatago	catt	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatggag	ttaaagttct	120
gggcgca	aagc	ggcagaggct	caatttcaag	cattgcacgg	ggcctggaat	gggcaggaaa	180
taatggo	catg	catattgcaa	atatgtcact	gggctcagat	caaccgtcag	caacactgga	240
acgggca	agtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgca	aggc	tcagttacct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aatagaagag	caagcttttc	acattatggc	gcaggccttg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaato	ggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<213> <220>		ificial Sequ Chetic	ience				
<400> gtcgaca	60 acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	gtt	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgca	agc	ggcagcggca	caatttcagg	cattgcacag	ggcctgcaat	gggcagcaga	180
taatggc	acg	catgttgcaa	atctgtcact	gggctcagat	tttccgtcat	caacactgga	240
acaggca	igtt	aattcägcaa	cätcacgggg	cgttctggtt	ğttgcagcat	caggcaataa 🔭	300
tggctca	ıggc	tcagttagct	atccggcagg	gtatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aatagaagag	caagctcttc	acaatatggc	gcaggccttg	atattgtcgc	420
accgggc	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaatg	gca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<211>	61 522 DNA						

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic

<400> 61									
gtcgacacaa (	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60			
taataacgat	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatggag	ttaaagttct	120			
gggcgcaaac	ggcagaggct	cagtttcagg	cattgcacgg	ggcttggaat	gggcagcaga	180			
taatggcatg	catgttgcaa	atatgtcact	gggcacatct	gcaccgtcag	caacactgga	240			
acaggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300			
cggcgcaggc	acaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360			
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420			
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgtttcac	tcaacggcac	480			
atcaatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522			
<220>	<211> 522 <212> DNA <213> Artificial Sequence								
<400> 62 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60			
taatagcatt q	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120			
gggcgcaagc	ggcagaggca	cagtttcaag	cattgcacag	ggcctggaat	gggcagcaaa	180			
taatggcacg (	catgttgcaa	atctgtcact	gggcacacct	tcaccgtcaa	caacactgga	240			
acgggcagtt	aattatgcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300			
cggcgcaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360			
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420			
accggccgtt	aatgttcaat	caacatatcc	gggcagcaca	tatgcttcaa	tgagcggcac	480			
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522			
<210> 63 <211> 522 <212> DNA <213> Arti	ficial Sequ	ience	,						

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic

<sup>&</sup>lt;400> 63

	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgat	ggcgttattg	gcgttgcacc	gaacgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	cagtttcagg	cattgcacag	ggcctggaat	gggcagcagc	180
aaatggcatg	catgttgcaa	atatgtcact	gggcacacct	caaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	cctcacaggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggctcaggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagctcttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 64 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic						
<400> 64	gatggcaatg	gacatggcac	acatottoca	ggcacaattg	cagcactgaa	60
						120
	ggcgttcttg					
gggcgcaagc	ggcagcggca	cagtttcagg	cattgcacgg	ggcctggaat	gggcagcaaa	180
taatggcatg	catattgcaa	atatgtcact	gggcacagat	gcaccgtcat	caacactgga	240
acaggcagtt	aattcagcaa	catcacaggg	cgttctggtt	attgcagcaa	caggcaatag	300
cggcgcaggc	acaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
	acaattagct					360 420
agatcaaaat		caagcttttc	acaatatggc	acaggcattg	atattgttgc	
agatcaaaat accgggcgtt	aatagaagag	caagcttttc caacatatcc	acaatatggc gggcagcaca	acaggcattg	atattgttgc	420

gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60

<220>

<400> 65

<223> Synthetic

taatagca	tt	ggcgttcttg	gcgttgcacc	gaacgctgaa	ctgtatggag	ttaaagttct	120
gggcgcaa	ac	ggcagcggct	caatttcagg	catagcacgg	ggcctggaat	gggcaggaaa	180
taatggca	tg	catattgcaa	atctgtcact	gggcacagat	tcaccgtcag	caacactgga	240
acaggcag	tt	aattatgcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaatag	300
cggctcag	gc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaa	at	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcg	tt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480
atcaatgg	ca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<211> 5 <212> D <213> A <220>		ficial Sequ	1ence				
<400> 6		gataggaata	gacatggcac	acatottoca	aggagagtta	cagcactgaa	60
							120
			gcgttgcacc				180
			caatttcaag				
			atctgtcact				240
acaggcag	tt	aatcaagcaa	catcacgggg	cgttctggtt	attgcagcaț	caggcaataa	300
cggctcag	gc	tcagttagct	atccggcaag -	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaa	at	aataatagag	caagctcttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcg	ıtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaatgg	ca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<211> 5 <212> D <213> A	7 222 NA rti	ficial sequ	ience				
<220> <223> S	ynt	hetic					
	7 aa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60

taatagcgtt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	caatttcagg	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcatg	catgttgcaa	atctgtcact	gggcacatct	gcaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
acccggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgcttcaa	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
	ificial Sequ	ıence				
<220> <223> Synt	thetic					
<400> 68 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	cagtttcaag	cattgcacgg	ggcctgcaat	gggcaggaga	180
taatggcatg	catgttgcaa	atatgtcact	gggcacatct	tttccgtcag	caacactgga	240
acaggcagtt	aatgcagcaa	catcacaggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggctcaggc	tcagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	cääacttttc	acaatatggc	acaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<220>	ificial Sequ	ıence				
<400> 69	chetic					
	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgtt.	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120

gggcgcaagc ggcagaggc	t cagtttcagg	cattgcacag	ggcctggaat	gggcagcagc	180
aaatggcatg catgttgca	a atatgtcact	gggctcagat	gcaccgtcag	caacactgga	240
acgggcagtt aatcaagca	a catcacgggg	cgttctggtt	attgcagcaa	caggcaataa	300
cggctcaggc tcaattagc	t atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat aataataga	g caagetttte	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt aatgttcaa	t caacatatcc	gggcagcaca	tatgtttcac	tgagcggcac	480
atcaatggca tcaccgcat	g ttgcaggcgc	tgcagcacta	gt		522
<210> 70 <211> 522 <212> DNA <213> Artificial Se <220> <223> Synthetic	quence				
<400> 70 gtcgacacaa gatggcaat	g gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgat ggcgttctt	g gegttgeace	gaacgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc ggcagcggc	a cagtttcagg	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcacg catattgca	a atctgtcact	gggcacacct	caaccgtcag	caacactgga	240
acgggcagtt aaatcagca	a catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcaggc tcagttagc	t atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat aataataga	g caagetttte	acaatatggc	gcaggcattg	atattgttgc	420
accgggcgtt ggcgttcaa	t caacatatcc	gggcagcaca	tatgcttcaa	tgagcggcac	480
atcaatggca acaccgcat	g ttgcaggcgt	tgcagcacta	gt		522
<210> 71 <211> 522 <212> DNA <213> Artificial Se <220> <223> Synthetic	quence				
<400> 71 gtcgacacaa gatggcaat	g gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat ggcgttatt	g gcgttgcacc	gagcgctgat	ctgtatggag	ttaaagttct	120

gggcgcaaac	ggcagcggct	caatttcagg	cattgcacag	ggcctggaat	gggcagcagc	180
aaatggcatg	catgttgcaa	atatgtcact	gggcacatct	tttccgtcat	caacactgga	240
acaggcagtt	aatgcggcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaga	tgtgtttcac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 72 <211> 522 <212> DNA <213> Arti	ficial Sequ	ıence				
<223> Synt	chetic					
<400> 72 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatgcag	ttaaagttct	120
gggcgcaaac	ggcagcggca	caatttcagg	cattgcacag	ggcctggaat	gggcagcaaa	180
taatggcatg	catgttgcaa	atatgtcact	gggctcacct	gcaccgtcag	caacactgga	240
acgggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatag	300
cggctcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgtttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 73 <211> 522 <212> DNA <213> Arti	ficial Sequ	ıence				
<220> <223> Synthetic						
<400> 73					_	
		gacatggcac				60
taataacgat	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagcggct	caatttcaag	cattgcacgg	ggcctggaat	gggcagcaga	180

taatggcacg	catattgcaa	atatgtcact	gggcacacct	caaccgtcag	caacactgga	240
acgggcagtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggctcaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattcttgc	420
accgggcgtt	ggggttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	ficial Sequ	ıence				
<400> 74						
	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcatt	ggcgttcttg	gcgttgtacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	cagtttcagg	cattgcacag	ggcctggaat	gggcaggaaa	180
taataatatg	catgttgcaa	atctgtcact	gggctcagat	tttccgtcat	caacactgga	240
acgggcagtt	aatgcagcaa	catcacggga	cgttctggtt	gttgcagcat	caggcaatac	300
cggctcaggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	caaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac "	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 75 <211> 522 <212> DNA <213> Arti	ficial Sequ	uence				
<220> <223> Synt	hetic					
<400> 75 gtcgactcaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagcggct	caatttcagg	cattgcacag	ggcctgcaat	gggcagcaga	180

taatggcatg	catgttgcaa	atctgtcact	gggctcacct	caaccgtcag	caacactgga	240
acgggcagtt	aattatgcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatac	300
cggcgcaggc	tcagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaga	tatgtttcac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 76 <211> 522 <212> DNA <213> Arti	ficial Sequ	nence				
<223> Synt	hetic					
<400> 76 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataacatt	ggcgttcttg	gcgttgcacc	gaacgttgat	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcagg	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcact	gggctcatct	caaccgtcag	caacactgga	240
acaggcagtt	aattcagcaa	catcacgggg	cgttctggtt	attgcagcaa	caggcaatac	300
cggcgcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcaa	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 77 <211> 522 <212> DNA <213> Arti	ficial Sequ	ience				
<220> <223> Synt	hetic					
<400> 77	gatggcaatg	gacatggcac	acatottoca	ggcacagttg	cagcactgaa	60
				ctgtatggag		120
	•			ggcctggaat		180
				caaccgtcat		240

acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggcgcaggc	tcaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgaacggcac	480
atctatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	ificial Sequ Chetic	ience				
<400> 78						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagcggca	caatttcaag	cattgcacag	ggcctggaat	gggcaggaac	180
aaatggcacg	catattgcaa	atctgtcact	gggcacagat	caaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggctcaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatgtcc	gggcaacaga	tatgtttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	ificial Sequ	ience				
<400> 79						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgtt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcaag	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcatg	catgttgcaa	atatgtcact	gggcacatct	tttccgtcat	caacactgga	240

acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaatag	300
cggctcaggc	acaattggct	atccgggaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	actggcattg	atattgttgc	420
accaggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 80 <211> 522 <212> DNA <213> Art		ıence				
	thetic					
<400> 80 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatgcag	ttaaagttct	120
gggcgcaaac	ggcagcggca	caatttcagg	cattgcacag	ggcctggaat	gggcagcaaa	180
taatggcacg	catgttgcaa	atctgtcact	gggcacagat	gcaccgtcag	caacactgga	240
acgggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggctcaggc	acaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgctttac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 81 <211> 522 <212> DNA <213> Art		uence				
<220> <223> Syn	thetic					
<400> 81 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcatt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcaag	cattgcacag	ggcctggaat	gggcaggagc	180
aaatggcatg	catattgcaa	atctgtcact	gggctcacct	gcaccgtcat	caacactgga	240
acqqqcaqtt	aattcagcaa	catcacaga	cattctaatt	attocagcaa	caggcaatac	300

cggctcaggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgtttcaa	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<220>	ificial Sequ Chetic	ıence				
<400> 82						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcattgaa	60
taataacatt	ggcgttcttg	gcgttgcacc	gaacgttggt	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	cagtttcagg	cattgcacgg	ggcctggaat	gggcagcaac	180
aaatggcatg	catgttgcaa	atctgtcact	gggctcagat	gcaccgtcag	caacactgga	240
acaggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatac	300
cggctcaggc	acaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caaacttttc	acaatatggc	caaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgtttcaa	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
	ificial Sequ	ience				
<220> <223> Synt	chetic					
<400> 83						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcaag	cattgcacgg	ggcctggaat	gggcagcagc	180
aaatggcatg	catgttgcaa	atctgtcact	gggctcagat	caaccgtcat	caacactgga	240
acqqqcaqtt	aatgaagcaa	catcacaggg	cattctaatt	attacagcat	caggcaataa	300

cggcgcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggcctcg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcaa	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 84 <211> 522 <212> DNA <213> Arts	ificial Sequ	lence				
<220> <223> Synt	thetic					
<400> 84 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgtt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgcaaac	ggcagcggct	caatttcaag	cattgcacgg	ggcctggaat	gggcagcaga	180
taatggcatg	catattgcaa	atctgtcact	gggctcatct	tttccgtcag	caacactgga	240
acaggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	attgcggcaa	caggcaatag	300
cggctcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatac	gggcagcaca	tatgcttcaa	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 85 <211> 522 <212> DNA <213> Art	ificial Sequ	uence			·	
<220> <223> Synt	thetic					
<400> 85 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgat	ggcgttcttg	gcgttgcacc	gaacgttgat	ctgtatggag	ttaaagttct	120
gggcgcaaac	ggcagcggca	cagtttcagg	cattgcacgg	ggcctgcaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcact	gggcacagat	gcaccgtcag	caacactgga	240
acgggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggcgcaggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360

agatcaaaat	aatagaagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatac	gggcaacaga	tatgtttcaa	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 86 <211> 522 <212> DNA <213> Art	ificial Sequ	ıence				
<220> <223> Syn	thetic					
<400> 86						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataacgct	ggcgttcttg	gcgttgcacc	gaacgttgat	ctgtatgcag	ttaaagttct	120
gggcgcaaac	ggcagcggct	caatatcagg	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcact	gggctcacct	caaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggcgtaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tttgcttcac	tgaacggcac	480
atcaatggca	tctccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 87 <211> 522 <212> DNA <213> Art:	ificial Sequ	ience				
<220> <223> Synt	chetic					
<400> 87 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gaacgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaaac	ggcagcggct	cagtttcagg	cattgcacag	ggcctggaat	gggcaggagc	180
aaatggcatg	catgttgcaa	atatgtcact	gggctcacct	tcaccgtcag	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatag	300
caacacaaac	tcagttagct	atccggcaag	atatocaaat	gcaatggcag	ttggcgcaac	360

agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgtttcac	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 88 <211> 522 <212> DNA <213> Arti	ficial Sequ	ience				
<220> <223> Synt	hetic					
<400> 88 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacatt	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagcggca	caatttcaag	cattgctcag	ggcctggaat	gggcaggagc	180
aaatggcatg	catgttgcaa	atctgtcact	gggcacatct	tttccgtcaa	caacactgga	240
acgggcagtt	aattcagcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaatag	300
cggctcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagctcttc	acaatatggc	gcaggcctcg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatac	gggcagcaca	tatgtttcac	tgagcggcac	480
atcaatggca	acacctcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 89 <211> 522 <212> DNA <213> Arti	ficial Sequ	ience				
<220> <223> Synt	hetic					
<400> 89 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgtt	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	caatttcaag	cattgcacgg	ggcctggaat	gggcagcaaa	180
taatggcacg	catgttgcaa	atctgtcact	gggctcacct	gcaccgtcag	caacactgga	240
acgggcagtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaataa	300
cggctcaggc	acaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaactcttc	acaatatggc	acaggccttg	atattgttgc	420

accgggcgtt	ggggttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaatggca	acacctcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 90 <211> 522 <212> DNA <213> Art		uence	·			
<220> <223> Syn	thetic					
<400> 90 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagcggca	caatttcaag	cattgcacgg	ggcctggaat	gggcaggaaa	180
taatggcatg	catgttgcaa	atatgtcact	gggctcacct	tcaccgtcag	caacactgga	240
acgggcagtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatac	300
cggcgcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	aatgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
		ıence				
<220> <223> Syn	thetic					
<400> 91 gtcgacacaa	gatggcaatg	gacatggcac	acatattgca	ggcacaattg	cagcactgaa	60
taatagcgtt	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcaag	cattgcacag	ggcctggaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcact	gggcacagat	caaccgtcag	caacactgga	240
acgggcagtt	aattcagcaa	catcacaggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcaggc	tcagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagetttte	acaatatooc	gcaggccttg	atattattac	420

accggg	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcaa	tgaacggcac	480
atcaato	ggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> <211> <212> <213>	92 522 DNA Arti	ificial Sequ	ıence				
<220> <223>	Synt	chetic					
<400>	92						-
grcgaca	acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	catt	ggcgttcttg	gcgttgcacc	gaacgctgaa	ctgtatgcag	ttaaagttct	120
gggcgca	agc	ggcagaggca	cagtttcagg	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggo	atg	catgttgcaa	atctgtcact	gggcacatct	tcaccgtcat	caacactgga	240
acaggca	agtt	aattatgcaa	catcacaggg	cgttctggtt	gttgcagcaa	caggcaatag	300
cggctca	aggc	acaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggc	gtt	cgcgttcaat	caacatatcc	gggcaacaga	tatgcttcac	tgagcggcac	480
atcaatg	ggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> <211> <212> <213>	93 522 DNA Arti	ificial Sequ	lence				
<220> <223>	Synt	chetic				÷	
<400>	93						
gtcgaca	caa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatago	gtt	ggcgttcttg	gcgttgcacc	gaacgctgaa	ctgtatggag	ttaaagttct	120
gggcgca	aac	ggcagaggca	caatttcaag	cattgcacgg	ggcctggaat	gggcaggagc	180
aaatggc	atg	catgttgcaa	atctgtcact	gggcacacct	gcaccgtcag	caacactgga	240
acaggca	gtt	aatcaagcaa	catcacaggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgca	ıggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aatagaagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accada	att	agcattcaat	caacatatcc	aaacaacaca	tatgetteac	tgaacggcac	480

atcaato	gca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210><211><211>	94 522 DNA						
<213>	Arti	ificial Sequ	ience				
<220> <223>	Synt	chetic					
<400> gtcgaca	94 acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatago	gtt	ggcgttcttg	gcgttgcacc	gaacgctgaa	ctgtatgcag	ttaaagttct	120
gggcgca	agc	ggcagcggct	cagtttcagg	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggo	catg	catgttgcaa	atctgtcact	gggctcacct	tttccgtcag	caacactgga	240
acaggca	agtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggctca	aggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aataatagag	caagcttttc	agaatatggc	gcaggccttg	atattgttgc	420
accggg	gtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atctato	ggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210><211><211><212><213>	95 522 DNA Art:	ificial Sequ	ience				
<220> <223>	Synt	chetic					
<400> gtcgaca	95 acaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataad	gtt	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatggag	ttaaagttct	120
gggcgca	aagc	ggcagcggct	caatttcaag	cattgcacgg	ggcctggaat	gggcaggaaa	180
taatggo	catg	catgttgcaa	atatgtcact	gggcacagat	gcaccgtcag	caacactgga	240
acgggca	agtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatag	300
cggcgca	aggc	tcagttgcct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aaat	aataatagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc ·	420
accggg	gtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480

atcaatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 96 <211> 522 <212> DNA <213> Art		uence				
<220> <223> Syr	thetic					
<400> 96 gtcgacacaa	. gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaago	ggcagaggca	cagtttcaag	cattgcacgg	ggtctgcaat	gggcagcaaa	180
taatggcatg	catgttgcaa	atctgtcact	gggctcagat	caaccgtcaa	caacactgga	240
acgggcagtt	aattatgcaa	catcacaggg	cgttctggtt	attgcagcat	caggcaatac	300
cggctcaggc	tcaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcaa	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 97 <211> 522 <212> DNA <213> Art		ience				
<220> <223> Syr	thetic					
<400> 97	gatgggaatg	aacataacac	acatottoca	aacacaatta	caccactosa	60
	gatggcaatg					120
	ggcgttcttg					
	ggcagaggct					180
	catgttgcaa	_				240
acgggcagtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaataa	300
cggctcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgaacggcac	480
atcaatggca	acaccacata	ttgcagggg	tacagcacta	at		522

	98 522 DNA Arti	ificial Sequ	ience				
<220> <223>	Synt	chetic					
<400>	98						
gtcgaca	caa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatago	gtt	ggcgttcttg	gcgttgcacc	gaacgctgat	ctgtatggag	ttaaagttct	120
gggcgca	agc	ggcagaggct	caatttcagg	cattgcacag	ggcctggaat	gggcagcaac	180
aaatggc	atg	catgttgcaa	atctgtcact	gggcacagat	caaccgtcag	caacactgga	240
acgggca	gtt	aattatgcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggctca	ıggc	acaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatac	gggcagcaga	tatgctctaa	tgagcggcac	480
atcaatg	gca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
		ificial Sequ	ience				
	- 7						
<400> gtcgaca	99 Icaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	gtt	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120
gggcgca	agc	ggcagaggca	cagtttcagg	cattgtacgg	ggcctggaat	gggcagcaga	180
taatggo	atg	catgttgcaa	atctgtcact	gggcacacct	tttccgtcag	caacactgga	240
acgggca	ıgtt	aatgcagcaa	catcacaggg	cgttctggtt	attgcagcat	caggcaatag	300
cggctca	ıggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aataatagag	caagcttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatcc	gggcaacaga	tatgcttcac	tgagcggcac	480
atcaato	ıaca	acaccgcatg	ttgcaggcgc	tocaocacta	at		522

<210> 100 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 100 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 120 taatagcgat ggcgttattg gcgttgcacc gagcgttgaa ctgtatgcag ttaaagttct gggcgcaaac ggcagaggct cagtttcagg cattgcacgg ggcctggaat gggcagcaaa 180 240 taataatatg catgttgcaa atctgtcact gggcacatct tcaccgtcat caacactgga acgggcagtt aaagcagcaa catcacaggg cgttctggtt gttgcagcat caggcaataa 300 360 cggcgcaggc acaatttgct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acaatatggc gcaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcaacaca tatgcttcac tgaacggcac 480 atcaatggca acaccgcatg ttgcaggcgt tgcagcacta gt 522 <210> 101 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 101 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taataacgtt ggcgttcttg gcgttgcacc gagcgctgat ctgtatggag ttaaagttct 120 180 gggcgcaaac ggcagcggct cagtttcaag cattgcacgg ggcctggaat gggcagcagc aaataatatg catgttgcaa atctgtcact gggctcacct caaccgtcag caacactgga 240 300 acgggcagtt aatgcagcaa catcacaggg cgttctggtt gttgcagcat caggcaatac 360 cggctcaggc atagttagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acaatatggc acaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgcttcac tgagcggcac 480 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt 522

<210><211><212><213>	102 522 DNA Arti	ificial Sequ	ıence				
<220> <223>	Synt	chetic					
<400>	102						
gtcgaca	caa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatago	att	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgca	aac	ggcagaggct	caatttcagg	cattgcacgg	ggcctggaat	gggcagcagc	180
aaatggo	catg	catattgcaa	atctgtcact	gggcacatct	tttccgtcaa	caacactgga	240
acgggca	gtt	aatcaagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggctca	ıggc	acagttggct	atccggcaac	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaa	aat	aatagaagag	caaacttttc	acaatatggc	gcaggcattg	atattgttgc	420
accgggc	gtt	ggcgttcaat	caacatatac	gggcaacaga	tatgcttcac	tgagcggcac	480
atcaatg	gca	tctccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<213>	103 522 DNA Arti	ficial Sequ	nence				
<220> <223>	Synt	hetic					
<400> gtcgact	103 caa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataac	gtt	ggcgttattg	gcgttgcacc	gagcgttgaa	ctgtatgcag	ttaaagttct	120
gggcgca	aac	ggcagcggca	caatttcagg	cattgcacgg	ggcctggaat	gggcaggagc	180
aaatggc							
acaaaca	atg	catattgcaa	atatgtcact	gggcacagat	tttccgtcat	caacactgga	240
acgggca			atatgtcact catcacaggg				240 300
	ıgtt	aattatgcaa		cgttctggtt	attgcagcat	caggcaatag	
cggcgca	igtt iggc	aattatgcaa tcagttggct	catcacaggg	cgttctggtt atatgcaaat	attgcagcat gcaatggcag	caggcaatag ttggcgcaac	300
cggcgca agatcaa	igtt iggc iaat	aattatgcaa tcagttggct aatagaagag	catcacaggg atccggcaag	cgttctggtt atatgcaaat acaatatggc	attgcagcat gcaatggcag acaggccttg	caggcaatag ttggcgcaac atattgttgc	300 360

<210> 104

<211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 104 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa 60 120 taatagcgtt ggcgttcttg gcgttgcacc gagcgttgaa ctgtatgcag ttaaagttct gggcgcaagc ggcagaggct caatttcagg cattgcacgg ggcctggaat gggcaggaaa 180 taatggcatg catgttgcaa atatgtcact gggctcacct tttccgtcag caacactgga 240 300 acgggcagtt aatcaagcaa catcacgggg cgttctggtt attgcagcat caggcaatag 360 cggcgcaggc tcagttagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acaatatggc gcaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgcttcac tgagcggcac 480 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt 522 <210> 105 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 105 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa taataacgtt ggcgttattg gcgttgcacc gaacgctgat ctgtatgcag ttaaagttct 120 gggcgcaagc ggcagaggca caatttcagg cattgcacgg ggcctggaat gggcaggagc 180 aaatggcatg catattgcaa atctgtcact gggcacacct tcaccgtcaa caacactgga 240 300 acgggcagtt aatgcagcaa catcacggga cgttctggtt gttgcagcat caggcaatgg 360 cggctcaggc tcaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acaatatggc gcgggccttg atattgttgc 420 480 accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgcttcac tgaacggcac atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt 522

<210> 106 <211> 522

<212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 106 gtcgacacaa gatggcaatg ggcatggcac acatgttgca ggcacagttg cagcactgaa 60 taatagegtt ggegttettg gegttgeace gagegetgaa etgtatgeag ttaaagttet 120 gggcgcaagc ggcagcggca cagtttcaag cattgcacgg ggcctggaat gggcagcaga 180 taataatatg catattgcaa atatgtcact gggcacacct tcaccgtcag caacactgga 240 300 acgggcagtt aatcaagcaa catcacgggg cgttctggtt gttgcagcaa caggcaatag cggctcaggc tcaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 agatcaaaat aatagaagag caaacttttc acaatatggc acaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgtttcac tgagcggcac 480 atcaatggca acaccgcatg ttgcaggcgt tgcagcacta gt 522 <210> 107 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 107 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 60 taatagcgtt ggcgttcttg gcgttgcacc gagcgttgaa ctgtatgcag ttaaagttct 120 gggcgcaagc ggcagaggca cagtttcagg cattgcacag ggcctgcaat gggcagcagc 180 240 aaatggcatg catgttgcaa atctgtcact gggcacagat tttccgtcag caacactgga acaggcagtt aatgcagcaa catcacgggg cgttctggtt gttgcagcat caggcaatag 300 cggctcaggc tcaattagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360 agatcaaaat aataatagag caaacttttc acaatatggc ggaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaca tatgtttcac tgagcggcac 480 atcaatggca gtaccgcatg ttgcaggcgc tgcagcacta gt 522

<210> 108 <211> 522 <212> DNA

<213> Arti	ficial Sequ	ience				
<220> <223> Synt	chetic					
<400> 108 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgtt	ggcgttattg	gcgttgcacc	gaacgttgat	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagcggca	caatttcaag	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcatg	catgttgcaa	atctgtcact	gggcacacct	gcaccgtcat	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcaggc	tcaattagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	acaggcattg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgcttcac	tgaacggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<220>	ificial Sequ Chetic	ience				
<400> 109 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgtt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	cagtttcaag	cattgcacgg	ggcctggaat	gggcagcaaa	180
taatggcacg	catgttgcaa	atatgtcact	gggcacatct	caaccgtcag	caacactgga	240
acaggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggctcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 110						

<211> 522 <212> DNA

<sup>54</sup> 

<223> Sy	nthetic					
<400> 11 gtcgacaca	) a gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcga	t ggcgttattg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120
gggcgcaaa	c ggcagcggta	cagtttcaag	cattgcacgg	ggcctgcaat	gggcagcaaa	180
taatggcat	g catgttgcaa	atctgtcact	gggctcagat	caaccgtcag	caacactgga	240
acgggcagt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggcgcagg	c acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaa	aataatagag	caagcttttc	acaatatggc	acaggccttg	atattgttgc	420
accgggcgt	ggcgttcaat	caacatatcc	gggcaacaca	tatgtttcaa	tgagcggcac	480
atcaatggc	a tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	2	lence				
_	iciiccic					
<4005 11°						
<400> 11	i a gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
gtcgacaca						60
gtcgacaca:	gatggcaatg	gcgttgcacc	gagcgttgat	ctgtatgcag	ttaaagttct	
gtcgacaca taataacgt gggcgcaag	gatggcaatg	gcgttgcacc cagtttcagg	gagcgttgat	ctgtatgcag ggcctgcaat	ttaaagttct gggcagcagc	120
gtcgacaca taataacgt gggcgcaag aaatggcat	gatggcaatg ggcgttattg ggcagaggct	gcgttgcacc cagtttcagg atctgtcact	gagcgttgat cattgcacgg gggctcatct	ctgtatgcag ggcctgcaat caaccgtcag	ttaaagttct gggcagcagc caacactgga	120 180
gtcgacaca taataacgt gggcgcaag aaatggcat acgggcagt	gatggcaatg ggcgttattg ggcagaggct gcatattgcaa	gcgttgcacc cagtttcagg atctgtcact catcacgggg	gagcgttgat cattgcacgg gggctcatct cgttctggtt	ctgtatgcag ggcctgcaat caaccgtcag gttgcagcat	ttaaagttct gggcagcagc caacactgga caggcaatag	120 180 240
gtcgacaca taataacgt gggcgcaag aaatggcat acgggcagt cggctcagg	a gatggcaatg ggcgttattg ggcagaggct g catattgcaa aattatgcaa	gcgttgcacc cagtttcagg atctgtcact catcacgggg atccggcaag	gagcgttgat cattgcacgg gggctcatct cgttctggtt atatgcaaat	ctgtatgcag ggcctgcaat caaccgtcag gttgcagcat gcaatggcag	ttaaagttct gggcagcagc caacactgga caggcaatag ttggcgcaac	120 180 240 300
gtcgacaca taataacgt gggcgcaag aaatggcat acgggcagt cggctcagg	a gatggcaatg c ggcgttattg c ggcagaggct g catattgcaa c aattatgcaa c acagttagct	gcgttgcacc cagtttcagg atctgtcact catcacgggg atccggcaag caaactcttc	gagcgttgat cattgcacgg gggctcatct cgttctggtt atatgcaaat acaatatggc	ctgtatgcag ggcctgcaat caaccgtcag gttgcagcat gcaatggcag acaggccttg	ttaaagttct gggcagcagc caacactgga caggcaatag ttggcgcaac atattgttgc	120 180 240 300 360
gtcgacaca taataacgt gggcgcaag aaatggcat acgggcagt cggctcagg agatcaaaa accgggcgt	a gatggcaatg c ggcgttattg c ggcagaggct g catattgcaa c aattatgcaa acagttagct c aataatagag	gcgttgcacc cagtttcagg atctgtcact catcacgggg atccggcaag caaactcttc	gagcgttgat cattgcacgg gggctcatct cgttctggtt atatgcaaat acaatatggc gggcaacaca	ctgtatgcag ggcctgcaat caaccgtcag gttgcagcat gcaatggcag acaggccttg tatgcttcac	ttaaagttct gggcagcagc caacactgga caggcaatag ttggcgcaac atattgttgc	120 180 240 300 360 420

<220> <223> Synthetic <400> 112 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa 120 taataacgtt ggcgttcttg gcgttgcacc gagcgctgaa ctgtatgcag ttaaagttct gggcgcaaac ggcagaggca caatttcagg cattgcacag ggcctggaat gggcagcaaa 180 240 taatggcatg catgttgcaa atctgtcact gggctcacct tcaccgtcag caacactgga 300 acaggcagtt aatgcagcaa catcacgggg cgttctggtt gttgcagcat caggcaatag 360 cggcgcaggc acaattggct atccggcaac atatgcaaat gcaatggcag ttggcgcaac 420 agatcaaaat aataatagag caagcttttc acaatatggc acaggcattg atattgttgc 480 accgggcgtt ggcgttcaat caacatatcc gggcaacaga tatgcttcaa tgagcggcac 522 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt <210> 113 <211> 522 <212> DNA <213> Artificial Sequence <220> <223> Synthetic <400> 113 60 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa taataacatt ggcgttcttg gcgttgcacc gagcgctgat ctgtatgcag ttaaagttct 120 gggcacaagc ggcagcggca cagtttcaag cattgcacgg ggcctggaat gggcagcaag 180 240 taatggcatg catgttgcaa atatgtcact gggcacatct caaccgtcag caacactgga acgggcagtt aatgcagcaa catcacgggg cgttctggtt gttgcagcaa caggcaatag 300 360 cggctcaggc acaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 420 agatcaaaat aatagaagag caagcttttc acaatatggc acaggccttg atattgttgc 480 accgggcgtt ggcgttaaat caacatatcc gggcagcaca tatgcttcac tgaacggcac 522 atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt <210> 114 <211> 522 <212> DNA <213> Artificial Sequence

<220>

## <223> Synthetic

<400> 114 60 qtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa taatagcatt ggcgttcttg gcgttgcacc gagcgttgaa ctgtatggag ttaaagttct 120 gggcgcaaac ggcagcggca caatttcaag cattgcacgg ggcctggaat gggcaggaaa 180 240 taatggcatg catgttgcaa atatgtcact gggctcagat tttccgtcat caacactgga 300 acaggcagtt aatgcagcaa catcacgggg cgttctggtt gttgcagcat caggcaatag 360 eggeteagge teagttgget ateeggeaag atatgeaaat geaatggeag ttggegeaac 420 agatcaaaat aatagaagag caaactette acaatatgge geaggeettg atattgttge accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgtttcac tgagcggcac 480 522 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt

<210> 115

<211> 522

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic

## <400> 115

gtcgacacaa gatggcaatg gacatggcac acatgttaca ggcacaattg cagcactgaa 60 taatagcatt ggcgttattg gcgttgcacc gagcgttgaa ctgtatggag ttaaagttct 120 gggcgcaagc ggcagaggct caatttcagg cattgcacgg ggcctggaat gggcagcaga 180 taatggcatg catgttgcaa atatgtcact gggctcacct caaccgtcag caacactgga 240 300 acaggcagtt aattcagcaa catcacgggg cgttctggtt attgcagcaa caggcaatag 360 cggctcaggc acaattgcct atccggcaag atatccaaat gcaatggcag ttggcgcaac agatcaaaat aataatagag caagcttttc acaatatggc caaggccttg atattgttgc 420 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgcttcac tgaacggcac 480 522 atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt

<sup>&</sup>lt;210> 116

<sup>&</sup>lt;211> 522

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic

```
<400> 116
gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacaattg cagcactgaa
                                                                      60
taataacgat ggcgttcttg gcgttgcacc gagcgttgat ctgtatggag ttaaagttct
                                                                     120
                                                                     180
gggcgcaagc ggcagaggca cagtttcaag cattgcacag ggcctgctat gggcagcaaa
taatggcacg catgttgcaa atatgtcact gggctcatct gcaccgtcaa caacactgga
                                                                     240
                                                                     300
acgggcagtt aattatgcaa catcacgggg cgttctggtt gttgcagcat caggcaatag
cggctcaggc acaattagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac
                                                                     360
                                                                     420
agatcaaaat aataatagag caagcttttc acaatatggc gcaggcattg atattgttgc
                                                                     480
accgggcgtt aatgttcaat caacatatcc gggcagcaca tatgtttcac tgagcggcac
                                                                     522
atcaatggca tcaccgcatg ttgcaggcgt tgcagcacta gt
<210> 117
<211> 522
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<400> 117
qtcqacacaa qacqqcaatq qacatqqcac acatgttqca ggcacaattg cagcactgaa
                                                                      60
taatagegtt ggegttattg gegttgeace gagegetgat etgtatgeag ttaaagttet
                                                                     120
gggcgcaagc ggcagaggct cagtttcagg cattgcacgg ggcctggaat gggcagcaaa
                                                                     180
taatggcatg catgttgcaa atctgtcact gggctcacct gcaccgtcag caacactgga
                                                                     240
acgggcagtt aattatgcaa catcacgggg cgttctggtt attgcagcat caggcaatag
                                                                     300
cggcgcaggc tcagttggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac
                                                                     360
agatcaaaat aataatagag caagcttttc acaacatggc acaggccttg atattgttgc
                                                                     420
                                                                     480
acceggegtt ggegtteaat caacatatee gggeageaga tatgetteae tgageggeae
                                                                     522
atcaatggca tcaccgcatg ttgcaggcgc tgcagcgcta gt
<210> 118
```

<211> 522 <212> DNA

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic

```
<400> 118
  gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa
                                                                        60
  taatagegtt ggegttettg gegttgeace gagegetgat etgtatgeag ttaaagttet
                                                                       120
 gggcgcaagc ggcagcggca caatttcagg cattgcacag ggcctggaat gggcagcaaa
                                                                       180
  taatggcacg catgttgcaa atctgtcact gggcacatct caaccgtcag caacactgga
                                                                       240
  acgggcagtt aatgcagcaa catcacaggg cgttctggtt gttgcagcaa caggcaatac
                                                                       300
 cggcgcaggc acaattggct atccggcaag atatgcaaat gcaatggcag ttggcgcaac
                                                                       360
 agatcaaaat aataatagag caagcttttc acaatatggc acaggccttg atattgttgc
                                                                       420
 accgggggtt ggcgttcaat caacatatcc gggcagcaga tatgcttcac tgagcggcac
                                                                       480
 atcaatggca acaccgcatg ttgcaggcgc tgcagcacta gt
                                                                       522
 <210> 119
 <211>
        522
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic
 <400> 119
 gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa
                                                                        60
 taatagcatt ggcgttcttg gcgtcgcacc gagcgttgaa ctgtatgcag ttaaagttct
                                                                      120
 gggcgcaagc ggcagaggct caatttcaag cattgcacgg ggcctggaat gggcaggaga
                                                                      180
 taatggcatg catattgcaa atatgtcact gggcacagat caaccgtcag caacactgga
                                                                      240
 acaggcagtt aatgcagcaa catcacgggg cgttctggtt attgcagcaa caggcaatac
                                                                      300
 cggcgcaggc tcaattagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac
                                                                      360
 agatcaaaat aataatagag cgaacttttc tcaatatggc gcaggccttg atattgttgc
                                                                      420
 accgggcgtt ggcgttcaat caacatatcc gggcagcaga tatgcttcaa tgaacggcac
                                                                      480
 atcaatggca acaccgcatg ttgcaggcgt tgcagcacta gt
                                                                      522
 <210> 120
 <211> 522
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic
<400> 120
```

60

gtcgacacaa gatggcaatg gacatggcac acatgttgca ggcacagttg cagcactgaa

<400> 122

taatagcatt	ggcgttcttg	gcgttgcacc	gagcgctgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggct	cagtttcagg	cattgcacag	ggcctggaat	gggcaggaac	180
aaatggcatg	catgttgcaa	atatgtcact	gggcacacct	gcaccgtcag	caacactgga	240
acaggcagtt	aatgcagcaa	catcacaggg	cgttctggtt	attgcagcat	caggcaatag	300
cggctcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atactgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcaa	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	ificial Sequ	ience				
<223> Synt	chetic					
<400> 123 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taataacatt	ggcgttcttg	gcgttgcacc	gagcgttgaa	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagcggct	cagtttcaag	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcatg	catgttgcaa	atatgtcact	gggctcacct	tttccgtcat	caacactgga	240
acaggcagtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatag	300
cggctcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<210> 124 <211> 522 <212> DNA <213> Arti	ificial Sequ	ience				
<220> <223> Synt	chetic					
<400> 124 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60

taatagcatt	ggcgttattg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120
gggcgcaagc	ggcagcggct	cagtttcaag	cattgcacgg	ggcctggaat	gggcaggaga	180
taatggcatg	catgttgcaa	atctgtcact	gggctcacct	tcaccgtcag	caacactgga	240
acaggcagtt	aattcagcaa	catcacgggg	cgttctggtt	attgcagcaa	caggcaatac	300
cggcgcaggc	acacttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caagcttttc	acaatatggc	accggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgtttcac	tgaacggcac	480
atcaatggca	acaccgcatg	ttgcaagcgc	tgcagcacta	gt o		522
<220>	ificial Sequ	ience				
<223> Synt	chetic					
<400> 125 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgtt	ggcgttcttg	gcgttgcacc	gaacgttgaa	ctgtatgcag	ttaaagttct	120
gggcgcaagc	ggcagaggca	caatttcagg	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcacg	catattgcaa	atctgtcact	gggcacatct	tttccgtcag	caacactgga	240
acgggcagtt	aattcagcaa	catcacgggg	cgttctggtt	gttgcagcaa	caggcaatac	300
cggcgcaggc	tcaattagct	atccggcaag	atttgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgg	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaatggca	acaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<220> <223> Synt	ificial Sequ Chetic	ience				
<400> 126 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat	ggcgttattg	gcgttgcacc	gagcgctgat	ctgtatgcag	ttaaagttct	120

gggcgcaaac	ggcagcggct	cagtttcaag	cattgcacag	ggcctggaat	gggcagcaga	180
taatggcatg	catattgcaa	atatgtcact	gggcacatct	tcaccgtcag	taacactgga	240
acgggcagtt	aatgcagcaa	catcacaggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggcgcaggc	tcaattggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aatagaagag	caagcttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	aatgttcaat	caacatatcc	gggcagcaga	tatgcttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgc	tgcagcacta	gt		522
<210> 127 <211> 522 <212> DNA <213> Arts	ificial Sequ	ience				
<220> <223> Synt	chetic					
<400> 127 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcatt	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatggag	ttaaagttct	120
gggcgcaaac	ggcagcggct	cggtttcaag	cattgcacgg	ggcctggaat	gggcaggaaa	180
taatggcatg	catattgcaa	atctgtcact	gggctcagat	tttccgtcag	caacactgga	240
acaggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaataa	300
cggctcaggc	tcagttggct	atccggcaag	atatgcaaat	gcaatgggag	ttggcgcaac	360
agatcaaaat	aatagaagag	caaacttttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatgtttcac	tgaacggcac	480
atcaatggca	acaccacatg	ttgcgggcgt	tgcagcacta	gt		522
<210> 128 <211> 522 <212> DNA <213> Arti <220>	ficial Sequ	ience				
<223> Synt	chetic					
<400> 128 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacagttg	cagcactgaa	60
taatagcgat	ggcgttattg	gcgttgcacc	gaacgttgaa	ctgtatggag	ttaaagttct	120

gggcgcaaac	ggcagaggca	cagtttcagg	cattgcacag	ggcctggaat	gggcagcagc	180
aaatggcatg	catgttgcaa	atctgtcact	gggctcacct	gcaccgtcag	caacactgga	240
acaggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	attgcagcat	caggcaatag	300
cggcgcaggc	acagttggct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaacttttc	acagtatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcaacaca	tatacttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
<220>	ificial Sequ	ience				
<400> 129						
gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taataacgtt	ggcgttcttg	gcgttgcacc	gagcgttgat	ctgtatggag	ttaaagttct	120
ggacgcaagc	ggcagaggca	caatttcagg	cattgcacgg	ggcctggaat	gggcagcagc	180
aaatggcatg	catattgcaa	atatgtcact	gggctcagat	caaccgtcaa	caacactgga	240
acgggcagtt	aatgcagcaa	catcacgggg	cgttctggtt	gttgcagcat	caggcaatac	300
cggctcaggc	acagttagct	atccggcaag	atatgcaaat	gcaatggcag	ttggcgcaac	360
agatcaaaat	aataatagag	caaactcttc	acaatatggc	gcaggccttg	atattgttgc	420
accgggcgtt	ggcgttcaat	caacatatcc	gggcagcaca	tatgcttcac	tgagcggcac	480
atcaatggca	tcaccgcatg	ttgcaggcgt	tgcagcacta	gt		522
	ificial Sequ	ience				
<220> <223> Synt	thetic					
<400> 130 gtcgacacaa	gatggcaatg	gacatggcac	acatgttgca	ggcacaattg	cagcactgaa	60
taatagcgtt	ggcgttattg	gcgttgcacc	gagcgctgaa	ctgtatggag	ttaaagttct	120
gggcgcaaac	ggcagcggca	cagtttcagg	cattgcacgg	ggcctggaat	gggcagcaga	180

taatggcatg catgttgcaa atatgtcact gggctcatct gcaccgtcag caacactgga 240
acgggcagtt aattcagcaa catcacgggg cgttctggtt gttgcagcaa caggcaatag 300
cggcgcaggc tcaattagct atccggcaag atatgcaaat gcaatggcag ttggcgcaac 360
agatcaaaat aataatagag caagcttttc acaatatggc acaggccttg atattgttgc 420
accgggcgtt aatgttcaat caacatatcc gggcagcaga tatgcttcaa tgagcggcac 480
atcaatggca tcaccgcatg ttgcaggcgc tgcagcacta gt 522

<210> 131

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 131

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Asp Glu Gly Val Val Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Ser Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ser Gly Glu Asn Gly Met Asp 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 132

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 132

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140 Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 133

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 133

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 134

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 134

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val
35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Gly 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 135

<211> 172

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 135

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val
35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 136

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 136

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Gln Trp Ala Gly Asn Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 137

<211> 173

<212> PRT

<220>

<223> Synthetic

<400> 137

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 138

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<220>

<221> misc feature

<222> (20)..(20)

<223> Xaa in position 20 denotes an unknown amino acid

<400> 138

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Xaa Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 139

<211> 173

<212> PRT

<220>

<223> Synthetic

<400> 139

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Thr Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 140

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 140

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 141

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 141

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Thr Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Asp Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 142

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 142

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 40 35 Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Met His 50 55 Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 90 Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125 Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 150 145 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 143

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 143

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30 Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Asp Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 144

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 144

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val

35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Asp Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 145

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 145

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 146

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 146

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 70 Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 90 85 Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 147 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 147 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asp Asn Ser Val Gly Val Leu Gly Val Ala Pro Glu Ala Asp Leu Tyr Ala Val Lys Val Leu Ser Ala Ser Gly Ala Gly Ser Ile

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ser Ala Ala Asn Asn Met His

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu

55

50

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 148

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 148

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala

85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 149

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 149

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Asp Glu Gly Val Val Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Ser Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Ser Ile Ala Gl<br/>n Gly Leu Glu Tr<br/>p Ser Gly Glu As<br/>n Gly Met Asp $50 \hspace{1.5cm} 55 \hspace{1.5cm} 60$ 

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95 Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 150

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 150

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile
1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Thr Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Arg Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 151

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 151

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Thr Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125 Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 152

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 152

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Asp Glu Gly Val Val Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Ser Ala Ser Gly Ala Gly Ser Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ser Gly Glu Asn Gly Met Asp 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 153

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 153

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 154

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 154

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Asp Ser Leu Ser Gly Thr 145 150 155 160 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 155

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 155

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Gly Gln Tyr Ala Glu Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Leu 165 170 <210> 156

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 156

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Glu 130 135 140

Ile Glu Ser Thr Tyr Pro Gly Ser Ser Tyr Asp Ser Leu Arg Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 157

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 157

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Asp Glu Gly Val Val Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 158

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 158

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 159

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 159

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val
35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Lys 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 160

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 160

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Asn Ala 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Thr Asn Asn Met His 50

Ala Asn Asn Met Ser Leu Gly Ser Asp Phe 75

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala 80

Thr Gly Asn Asn Gly Ser Gly Ser Gly Ser Val 6105

Thr Gly Asn Asn Gly Ser Gly Ser Val 6105

Arg Ala Asn Asn Asn Gly Ser Gly Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala Thr Ser Val 6105

Arg Ala Val Asn Tyr Ala

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 161 <211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 161

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 162

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 162

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asp Asn Asp Glu Gly Val Val Gly Val Ala Pro Asn Ala 20 25 30 Asp Leu Tyr Ala Val Lys Val Leu Ser Ala Ser Gly Ala Gly Ser Ile 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ser Gly Glu Asn Gly Met Asp 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 163

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 163

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile

35 40 45

Ser Gly Ile Ala Gln Gly Leu Gln Trp Ala Gly Asn Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 164

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 164

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 165

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 165

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 70 Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 120 Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 135 Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 170 165 <210> 166 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 166 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Asn Asp Gly Val Leu Gly Val Ala Pro Asn Val Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Ile

Ser Gly Ile Ala Arg Gly Leu Gln Trp Ala Ala Asp Asn Gly Thr His

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Thr Thr Leu Glu

55

50

65

75

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 167

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 167

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Ser Ala Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Ala Ser Arg Gly Val Leu Val Val Ala Ala

85 90 95

Ser Gly Asn Asn Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 168

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 168

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95 Thr Gly Asn Asn Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 169

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 169

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 170

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 170

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Gln Trp Thr Ala Asp Asn Gly Met His 50 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ser Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ala Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125 Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 171

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 171

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Gln Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser His Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 172

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 172

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Thr Asn Asn Met His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Ser Gln Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser His Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 150 155 Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 <210> 173 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 173 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 10 Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 Ser Gly Ile Ala Arg Gly Leu Gln Trp Ala Ala Asp Asn Gly Met His Val Ala Asn Leu Ser Leu Gly Thr Pro Gln Pro Ser Ala Thr Leu Glu Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 90 85 Ser Gly Asn Thr Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 105 100 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140 Val Gln Ser Thr Tyr Arg Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr

150

145

155

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 174

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 174

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Ser Ser Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Thr Val Ser Tyr Pro Ala Thr Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 175

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 175

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 60

Val Ala Asn Met Ser Leu Gly Thr Pro Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Lys Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Lys Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 176

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 176

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Val
35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 177

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 177

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Glu Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 178

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 178

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Asn Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser His Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 179

<211> 173

2125 PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 179

5 1.0 Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Asn Met His 55 Ile Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 70 75 Gln Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 90 85 Ser Gly Asn Asn Gly Ser Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Leu Ser Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 180 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 180 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

10

5

Ala Ala Leu Asn Asn Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile 40 Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 55 50 Val Ala Asn Leu Ser Leu Gly Ser Asp Gln Pro Ser Ala Thr Leu Glu 65 Gln Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 120 115 Phe Ser Gln Tyr Gly Gln Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Met Ser Gly Thr 145 150 Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 170 165 <210> 181 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 181 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Val

25

20

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Lys Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Ser Ser Pro Ser Thr Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Gln Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 182

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 182

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Gly Val Leu Gly Val Ala Pro Ser Val
20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val

35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Pro Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 183

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 183

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Phe Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Val
35 40 45

Ser Ser Val Ala Gln Gly Leu Gln Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 184

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 184

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile  $35 \hspace{1.5cm} 40 \hspace{1.5cm} 45$ 

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Asn Thr His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ala Thr Leu Glu Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 90 Ser Gly Asn Thr Gly Ser Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 135 Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 185 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 185 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55

75

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu

70

65

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly
130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Thr Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 186

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 186

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

1 5 10 15

Ala Ala Leu Asn Asn Ile Gly Val Ile Gly Val Ala Pro Asn Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val 35 40 45

Ser Ser Ile Ala Arg Gly Leu Gln Trp Ala Ala Asn Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala

85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Leu Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 187

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 187

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Asp Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Asp Val Leu Val Val Ala Ala 85 90 95 Thr Gly Asn Thr Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Val Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 188

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 188

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile
1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val
35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Asp Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130

135

140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 189 <211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 189

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Thr Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125 Phe Ser His Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 190

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 190

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Gln Trp Ala Ala Asp Asn Gly Thr His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Val Ser Tyr Pro Ala Gly Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 191

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 191

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Asn Asp Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 60

Val Ala Asn Met Ser Leu Gly Thr Ser Ala Pro Ser Ala Thr Leu Glu 65 . 70 75 80

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 192

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 192

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 60

Val Ala Asn Leu Ser Leu Gly Thr Pro Ser Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Ala Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Ser Gly Thr 145 150 155 160 Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 193

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 193

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 194

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 194

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Asp Ala Pro Ser Ser Thr Leu Glu 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ala Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 195

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 195

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Asp Ser Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 196

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 196

Ala Ala Leu Asn Asn Ser Val Gly Val Ile Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Leu 165 170

<210> 197

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 197

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Ser Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Ala Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 198

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 198

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 40 Ser Ser Ile Ala Arg Gly Leu Gln Trp Ala Gly Asp Asn Gly Met His 55 Val Ala Asn Met Ser Leu Gly Thr Ser Phe Pro Ser Ala Thr Leu Glu 70 75 Gln Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 Ser Gly Asn Thr Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 150 155

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Leu 165 170

<210> 199
<211> 173
<212> PRT
<213> Artificial Sequence

<220> <223> Synthetic

<400> 199

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile
1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val Asp Leu Gly Val Ala Ser Gly Arg Gly Ser Val Ser Sor Gly Ile Ala Gln Gly Leu Gly Trp Ala Ala Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Ala Thr Reu Glu Arg Ala Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala Ala Arg Tyr Ala Ilo Gly Asn Asn Cly Ser Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 200

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 200

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Asp Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Val
35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Thr His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Lys Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 201

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 201

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Ile

35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Ser Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Cys Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 202

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 202

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Ile 35 40 45 Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly
130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 203

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 203

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Thr His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Pro Gln Pro Ser Ala Thr Leu Glu 70 Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 Ser Gly Asn Ser Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 120 115 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Leu Ala Pro Gly Val Gly Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 150 155 Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 204 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 204 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Val Pro Ser Ala Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Asn Asn Asn Met His 55 Val Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu

75

70

Arg Ala Val Asn Ala Ala Thr Ser Arg Asp Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Gln Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 205

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 205

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val  $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$ 

Ala Ala Leu Asn Asn Ser Asp Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Gln Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala

85 90 95

Thr Gly Asn Thr Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 206

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 206

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile
1 5 10 15

Ala Ala Leu Asn Asn Ile Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Ser Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95 Thr Gly Asn Thr Gly Ala Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 207

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 207

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val
35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ala Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 208

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 208

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Thr Asn Gly Thr His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Cys Pro Gly Asn Arg Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 209

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 209

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Ser Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 , 95

Ser Gly Asn Ser Gly Ser Gly Thr Ile Gly Tyr Pro Gly Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 210

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 210

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Leu Leu Ser Gly Thr
145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu
165 170

<210> 211 <211> 173 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 211

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala
20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 60

Ile Ala Asn Leu Ser Leu Gly Ser Pro Ala Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Met Ser Gly Thr 145 150 155 160 Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 212

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 212

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Gly Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Thr Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ser Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Gln Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 213

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 213

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Gln Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Glu Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 214

<211> 173 <212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 214

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 25

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Ile

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His

Ile Ala Asn Leu Ser Leu Gly Ser Ser Phe Pro Ser Ala Thr Leu Glu 70 75

Gln Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90

Thr Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135

Val Gln Ser Thr Tyr Thr Gly Ser Thr Tyr Ala Ser Met Asn Gly Thr 145 150 155

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165

<210> 215

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 215

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Val

Ser Gly Ile Ala Arg Gly Leu Gln Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Thr Gly Asn Arg Tyr Val Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 216

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 216

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1  $\phantom{000}$  5  $\phantom{000}$  10  $\phantom{000}$  15

Ala Ala Leu Asn Asn Asn Ala Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Val Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Phe Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 217

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 217

5 Ala Ala Leu Asn Asn Val Gly Val Leu Gly Val Ala Pro Asn Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 55 Val Ala Asn Met Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu 70 75 Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 Thr Gly Asn Ser Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asg Ala Ser 115 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Leu Asn Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 218 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 218

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

10

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

5

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile 35 40 Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 Val Ala Asn Leu Ser Leu Gly Thr Ser Phe Pro Ser Thr Thr Leu Glu Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 90 Ser Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 135 130 Val Gln Ser Thr Tyr Thr Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 150 155 160 145 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 170 165 <210> 219 <211> 173 <212> PRT <213> Artificial Sequence

<220>

<223> Synthetic

<400> 219

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30 Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 220

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 220

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile

35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 221

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 221

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Ile Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 222

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 222

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60 Val Ala Asn Leu Ser Leu Gly Thr Ser Ser Pro Ser Ser Thr Leu Glu 75 70 Gln Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 90 85 Thr Gly Asn Ser Gly Ser Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Arg 135 Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 150 155 Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 223 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 223 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Ile Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55

75

Val Ala Asn Leu Ser Leu Gly Thr Pro Ala Pro Ser Ala Thr Leu Glu

70

Gln Ala Val Asn Gln Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 224

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 224

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala

85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Glu Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 225

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 225

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Asp Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95 Thr Gly Asn Ser Gly Ala Gly Ser Val Ala Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 226

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 226

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

-Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val
35 40 45

Ser Ser Ile Ala Arg Gly Leu Gln Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Gln Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 227

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 227

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Ser Val Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Thr His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Leu 165 170

<210> 228

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 228

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Thr Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Thr Gly Ser Arg Tyr Ala Leu Met Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 229

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 229

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 45

Ser Gly Ile Val Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Thr Pro Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 \$105\$ 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 <210> 230 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 230 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 10 Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Val 20 25 Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Asn Met His Val Ala Asn Leu Ser Leu Gly Thr Ser Ser Pro Ser Ser Thr Leu Glu Arg Ala Val Lys Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 Ser Gly Asn Asn Gly Ala Gly Thr Ile Cys Tyr Pro Ala Arg Tyr Ala 105 100 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 120 125 115 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135

155

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Ala Ser Leu Asn Gly Thr

150

145

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 231

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 231

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Ile Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 232

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 232

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Ser Phe Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Thr Val Gly Tyr Pro Ala Thr Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Thr Gly Asn Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 233

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 233

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 234

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 234

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Pro Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly
130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 235

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 235

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Asn Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Thr Pro Ser Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Asp Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Gly Gly Ser Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 236

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 236

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Val Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Asn Met His 55 Ile Ala Asn Met Ser Leu Gly Thr Pro Ser Pro Ser Ala Thr Leu Glu Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Thr Gly Asn Ser Gly Ser Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 135 Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Val Ser Leu Ser Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170 <210> 237 <211> 173 <212> PRT <213> Artificial Sequence <220>

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

5

<223> Synthetic

5

<400> 237

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

20 Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 40 35 Ser Gly Ile Ala Gln Gly Leu Gln Trp Ala Ala Asn Gly Met His 50 55 Val Ala Asn Leu Ser Leu Gly Thr Asp Phe Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Ser Gly Asn Ser Gly Ser Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 Phe Ser Gln Tyr Gly Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 145 155 160 Ser Met Ala Val Pro His Val Ala Gly Ala Ala Ala Leu 165 <210> 238 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 238 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val

Ala Ala Leu Asn Asn Ser Val Gly Val Ile Gly Val Ala Pro Asn Val 25

20

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Pro Ala Pro Ser Ser Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 239

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 239

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val

35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Ser Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 240

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 240

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Val
35 40 45

Ser Ser Ile Ala Arg Gly Leu Gln Trp Ala Ala Asn Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala
85 90 95

Ser Gly Asn Ser Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 241

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 241

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Ile Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Gln Trp Ala Ala Ala Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Ser Gln Pro Ser Ala Thr Leu Glu 75 70 Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 Ser Gly Asn Ser Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 135 Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Ala Ser Leu Ser Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 242 <211> 173 <212> PRT <213> Artificial Sequence <220> <223> Synthetic <400> 242 Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 5 Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Ile Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55

75

Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu

65

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Thr Ile Gly Tyr Pro Ala Thr Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Leu 165 170

<210> 243

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 243

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Thr Ser Gly Ser Gly Thr Val 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Ser Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Ser Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala

85 90 95

Thr Gly Asn Ser Gly Ser Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Lys Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 244

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 244

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Ile 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Asp Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95 Ser Gly Asn Ser Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Leu 165 170

<210> 245

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 245

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Pro Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Ser Gly Ser Gly Thr Ile Ala Tyr Pro Ala Arg Tyr Pro
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Gln Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 246

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 246

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1  $\phantom{000}$  5  $\phantom{000}$  10  $\phantom{000}$  15

Ala Ala Leu Asn Asn Asn Asp Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Leu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Ser Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125 Phe Ser Gln Tyr Gly Ala Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 247

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 247

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asn Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln His Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly

130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 248

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 248

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val
1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Ser Gly Thr Ile 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asn Asn Gly Thr His 50 55 60

Val Ala Asn Leu Ser Leu Gly Thr Ser Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ala Gly Thr Ile Gly Tyr Pro Ala Arg Tyr Ala
100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr
145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 249

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 249

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Ile  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Asp Gln Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 685 90 95

Thr Gly Asn Thr Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Met Asn Gly Thr 145 150 155 160 Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 250

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 250

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Asp Gly Val Leu Gly Val Ala Pro Asn Val 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Gly Ala Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Ser Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 251

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 251

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val
35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 60

Val Ala Asn Leu Ser Leu Gly Ser Asp Gln Leu Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Gln Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Ser Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 252

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 252

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Leu Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Gly Thr Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Thr Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Thr Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Met Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 253

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 253

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Asn Ile Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Pro Phe Pro Ser Ser Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ser Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 254

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 254

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Gly Ala Ser Gly Ser Gly Ser Val 35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asp Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Ser Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Thr Gly Ala Gly Thr Leu Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Val Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Ser Ala Ala Ala Leu 165 170

<210> 255

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 255

5 Ala Ala Leu Asn Asn Ser Val Gly Val Leu Gly Val Ala Pro Asn Val Glu Leu Tyr Ala Val Lys Val Leu Gly Ala Ser Gly Arg Gly Thr Ile Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Thr His 55 50 Ile Ala Asn Leu Ser Leu Gly Thr Ser Phe Pro Ser Ala Thr Leu Glu 70 Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala Thr Gly Asn Thr Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Phe Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Gly Pro Gly Val Gly 130 135 Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 150 155 Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 256 <211> 173 <212> PRT <213> Artificial Sequence

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

<220>

<400> 256

<223> Synthetic

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val 35 40 45

Ser Ser Ile Ala Gln Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Thr Ser Ser Pro Ser Val Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Gln Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ala Gly Ser Ile Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Ser 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170

<210> 257

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 257

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30 Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Ser Val
35 40 45

Ser Ser Ile Ala Arg Gly Leu Glu Trp Ala Gly Asn Asn Gly Met His 50 55 60

Ile Ala Asn Leu Ser Leu Gly Ser Asp Phe Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Gly Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Val Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 258

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 258

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val

1 10 15

Ala Ala Leu Asn Asn Ser Asp Gly Val Ile Gly Val Ala Pro Asn Val 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Arg Gly Thr Val

35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Val Ala Asn Leu Ser Leu Gly Ser Pro Ala Pro Ser Ala Thr Leu Glu 65 70 75 80

Gln Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Ile Ala Ala 85 90 95

Ser Gly Asn Ser Gly Ala Gly Thr Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Thr Tyr Thr Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 259

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 259

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile

5 10 15

Ala Ala Leu Asn Asn Asn Val Gly Val Leu Gly Val Ala Pro Ser Val 20 25 30

Asp Leu Tyr Gly Val Lys Val Leu Asp Ala Ser Gly Arg Gly Thr Ile 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Ala Asn Gly Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Gln Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Ala Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 95

Ser Gly Asn Thr Gly Ser Gly Thr Val Ser Tyr Pro Ala Arg Tyr Ala 100 105 110

Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asn Arg Ala Asn 115 120 125

Ser Ser Gln Tyr Gly Ala Gly Leu Asp Ile Val Ala Pro Gly Val Gly 130 135 140

Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala Ser Leu Ser Gly Thr 145 150 155 160

Ser Met Ala Ser Pro His Val Ala Gly Val Ala Ala Leu 165 170

<210> 260

<211> 173

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 260

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Ile 1 5 10 15

Ala Ala Leu Asn Asn Ser Val Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Glu Leu Tyr Gly Val Lys Val Leu Gly Ala Asn Gly Ser Gly Thr Val 35 40 45

Ser Gly Ile Ala Arg Gly Leu Glu Trp Ala Ala Asp Asn Gly Met His 50 55 60

Val Ala Asn Met Ser Leu Gly Ser Ser Ala Pro Ser Ala Thr Leu Glu 65 75 Arg Ala Val Asn Ser Ala Thr Ser Arg Gly Val Leu Val Val Ala Ala 85 90 Thr Gly Asn Ser Gly Ala Gly Ser Ile Ser Tyr Pro Ala Arg Tyr Ala 100 105 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Asg Ala Ser 115 120 Phe Ser Gln Tyr Gly Thr Gly Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Arg Tyr Ala Ser Met Ser Gly Thr 150 Ser Met Ala Ser Pro His Val Ala Gly Ala Ala Ala Leu 165 170 <210> 261 <211> 380 <212> PRT <213> Bacillus <400> 261 Met Lys Lys Pro Leu Gly Lys Ile Val Ala Ser Thr Ala Leu Leu Ile 10 Ser Val Ala Phe Ser Ser Ser Ile Ala Ser Ala Ala Glu Glu Ala Lys 20 25 Glu Lys Tyr Leu Ile Gly Phe Asn Glu Gln Glu Ala Val Ser Glu Phe 35 Val Glu Gln Val Glu Ala Asn Asp Glu Val Ala Ile Leu Ser Glu Glu 50 55

Glu Glu Val Glu Ile Glu Leu Leu His Glu Phe Glu Thr Ile Pro Val

Leu Ser Val Glu Leu Ser Pro Glu Asp Val Asp Ala Leu Glu Leu Asp

70

65

75

80

Pro	Ala	Ile	Ser 100	Tyr	Ile	Glu	Glu	Asp 105	Ala	Glu	Val	Thr	Thr 110	Met	Ala
Gln	Ser	Val 115	Pro	Trp	Gly	Ile	Ser 120	Arg	Val	Gln	Ala	Pro 125	Ala	Ala	His
Asn	Arg 130	Gly	Leu	Thr	Gly	Ser 135	Gly	Val	Lys	Val	Ala 140	Val	Leu	Asp	Thr
Gly 145	Ile	Ser	Thr	His	Pro 150	Asp	Leu	Asn	Ile	Arg 155	Gly	Gly	Ala	Ser	Phe
Val	Pro	Gly	Glu	Pro 165	Ser	Thr	Gln	Asp	Gly 170	Asn	Gly	His	Gly	Thr 175	His
Val	Ala	Gly	Thr 180	Ile	Ala	Ala	Leu	Asn 185	Asn	Ser	Ile	Gly	Val 190	Leu	Gly
Val	Ala	Pro 195	Ser	Ala	Glu	Leu	Tyr 200	Ala	Val	Lys	Val	Leu 205	Gly	Ala	Ser
,	210					Ser 215					220				
225					230	Ala		÷		235	,				240
				245		Ala			250					255	
			260			Gly		265					270		
		275				Ala	280					285			
Asn	Asn 290	Arg	Ala	Ser	Phe	Ser 295	Gln	Tyr	Gly	Ala	Gly 300	Leu	Asp	Ile	Val

Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly Ser Thr Tyr Ala 305  $\phantom{\bigg|}310\phantom{\bigg|}315\phantom{\bigg|}315\phantom{\bigg|}$ 

```
Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val Ala Gly Val Ala
                325
Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn Val Gln Ile Arg
Asn His Leu Lys Asn Thr Ala Thr Ser Leu Gly Ser Thr Asn Leu Tyr
                            360
Gly Ser Gly Leu Val Asn Ala Glu Ala Ala Thr Arg
                        375
<210> 262
<211> 173
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic
<220>
<221> misc_feature
<222> (16)..(16)
<223> Xaa denotes Ile or Val
<220>
<221> misc_feature
<222> (20)..(20)
<223> Xaa denotes Asp or Asn
<220>
<221> misc_feature
<222> (22)..(22)
<223> Xaa denotes Asp, Ser, or Asn
<220>
<221> misc_feature <222> (23)..(23)
<223> Xaa denotes Ile, Val or Glu
<220>
<221> misc feature
```

<220>

<222> (26)..(26)

<223> Xaa denotes Ile, Val or Leu

```
<221> misc_feature <222> (31)..(31)
<223> Xaa denotes Asn, Glu, or Ser
<220>
<221> misc_feature <222> (32)..(32)
<223> Xaa denotes Ala or Val
<220>
<221> misc_feature
<222> (33)..(33)
<223> Xaa denotes Asp or Glu,
<220>
<221> misc_feature
<222> (36)..(36)
<223> Xaa denotes Ala or Gly
<220>
<221> misc_feature
<222> (41)..(41)
<223> Xaa denotes Gly, Ser or Arg
<220>
<221> misc feature
<222> (43)..(43)
<223> Xaa denotes Ser or Asn
<220>
<221> misc feature
<222> (45)..(45)
<223> Xaa denotes Ser, Ala or Arg
<220>
<221> misc_feature
<222> (48)..(48)
<223> Xaa denotes Ile or Val
<220>
<221> misc_feature
<222> (50)..(50)
<223> Xaa denotes Gly or Ser
<220>
<221> misc_feature <222> (53)..(53)
<223> Xaa denotes Arg or Gln
```

```
<220>
  <221> misc_feature
  <222> (56)..(56)
  <223> Xaa denotes Glu or Gln
  <220>
  <221> misc_feature
  <222> (58)..(58)
  <223> Xaa denotes Ala or Ser
  <220>
  <221> misc_feature
  <222> (59)..(59)
  <223> Xaa denotes Gly or Ala
  <220>
  <221> misc_feature
  <222> (60)..(60)
  <223> Xaa denotes Glu, Ala, Thr, or Asn
  <220>
  <221> misc_feature
  <222> (62)..(62)
  <223> Xaa denotes Gly or Asn
  <220>
  <221> misc_feature
<222> (64)..(64)
  <223> Xaa denotes Asp or His
---<220>
  <221> misc_feature
  <222> (68)..(68)
  <223> Xaa denotes Leu or Met
  <220>
  <221> misc_feature
  <222> (72)..(72)
  <223> Xaa denotes Ser or Thr
  <220>
  <221> misc feature
  <222> (73)..(73)
  <223> Xaa denotes Ser or Asp
```

<220>

```
<221> misc_feature
<222> (74)..(74)
<223> Xaa denotes Ala or Phe
<220>
<221> misc_feature <222> (77)..(77)
<223> Xaa denotes Ala, Thr, or Ser
<220>
<221> misc_feature
<222> (80)..(80)
<223> Xaa denotes Glu, Lys, or Gly
<220>
<221> misc_feature
<222> (81)..(81)
<223> Xaa denotes Gln or Arg
<220>
<221> misc_feature
<222> (85)..(85)
<223> Xaa denotes Ala or Tyr
<220>
<221> misc feature
<222> (89)..(89)
<223> Xaa denotes Arg or Gln
<220>
<221> misc_feature
<222> (90)..(90)
<223> Xaa denotes Asp or Gly
<220>
<221> misc_feature
<222> (97)..(97)
<223> Xaa denotes Ser or Thr
<220>
<221> misc_feature
<222> (100)..(100)
<223> Xaa denotes Ser or Asn
<220>
<221> misc_feature
<222> (102)..(102)
<223> Xaa denotes Ala or Ser
```

```
<220>
<221> misc feature
<222> (125)..(125)
<223> Xaa denotes Asn or Arg
<220>
<221> misc_feature
<222> (128)..(128)
<223> Xaa denotes Ser or Asn
<220>
<221> misc_feature
<222> (134)..(134)
<223> Xaa denotes Ala or Thr
<220>
<221> misc_feature
<222> (136)..(136)
<223> Xaa denotes Leu or Ile
<220>
<221> misc_feature
<222> (144)..(144)
<223> Xaa denotes Gly, Arg, or Asn
<220>
<221> misc_feature
<222> (145)..(145)
<223> Xaa denotes Val or Leu
<220>
<221> misc_feature
<222> (146)..(146)
<223> Xaa denotes Gln or Arg
<220>
<221> misc_feature
<222> (152)..(152)
<223> Xaa denotes Gly, Asn, Ser, or Thr
<220>
<221> misc feature
<222> (153)..(153)
<223> Xaa denotes Arg, Ser, Thr, or Gln
<220>
```

```
<221> misc_feature
<222> (155)..(155)
<223> Xaa denotes Val, Ala, or Asp
<220>
<221> misc_feature
<222> (156)..(156)
<223> Xaa denotes Glu, Arg, or Ser
<220>
<221> misc_feature
<222> (157)..(157)
<223> Xaa denotes Leu or Met
<220>
<221> misc feature
<222> (158)..(158)
<223> Xaa denotes Asn, Ser , or Arg
<220>
<221> misc feature
<222> (164)..(164)
<223> Xaa denotes Ser or Thr
<220>
<221> misc feature
<222> (170)..(170)
<223> Xaa denotes Ala or Val
<400> 262
Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Xaa
                5
Ala Ala Leu Xaa Asn Xaa Kaa Gly Val Xaa Gly Val Ala Pro Xaa Xaa
Xaa Leu Tyr Xaa Val Lys Val Leu Xaa Ala Xaa Gly Xaa Gly Ser Xaa
       35
                           40
Ser Xaa Ile Ala Xaa Gly Leu Xaa Trp Xaa Xaa Xaa Asn Xaa Met Xaa
    50
Ile Ala Asn Xaa Ser Leu Gly Xaa Xaa Yao Pro Ser Xaa Thr Leu Xaa
                    70
                                        75
65
```

```
Xaa Ala Val Asn Xaa Ala Thr Ser Xaa Xaa Val Leu Val Ile Ala Ala
                                    90
Xaa Gly Asn Xaa Gly Xaa Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala
                                105
Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Xaa Arg Ala Xaa
                            120
Phe Ser Gln Tyr Gly Xaa Gly Xaa Asp Ile Val Ala Pro Gly Val Xaa
    130
                        135
Xaa Xaa Ser Thr Tyr Pro Gly Xaa Xaa Tyr Xaa Xaa Xaa Xaa Gly Thr
                    150
Ser Met Ala Xaa Pro His Val Ala Gly Xaa Ala Ala Leu
                165
                                    170
<210> 263
<211> 15
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic
<400> 263
                                                                      15
agtacccagg acgga
<210> 264
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Synthetic
<400> 264
Ala Ala Leu Asn Asn Ser Ile Gly Val Leu
<210> 265
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
```

<223> Synthetic

<400> 265

Ala Ala Leu Gln Asn Ala Leu Gly Val Val 1 5 10

<210> 266

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 266

Ala Ala Leu Gln Asn Thr Val Gly Val Met

1 5 10

<210> 267

<211> 175

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 267

Ser Thr Gln Asp Gly Asn Gly His Gly Thr His Val Ala Gly Thr Val 1 5 10 15

Ala Ala Leu Asn Asn Ser Ile Gly Val Ile Gly Val Ala Pro Ser Ala 20 25 30

Asp Leu Tyr Ala Val Lys Val Leu Gly Ala Asn Gly Arg Gly Ser Val 35 40 45

Ser Gly Ile Ala Gln Gly Leu Glu Trp Ala Ala Ala Asn Asn Met His 50 55 60

Ile Ala Asn Met Ser Leu Gly Ser Asp Ala Pro Ser Thr Thr Leu Glu 65 70 75 80

Arg Ala Val Asn Tyr Ala Thr Ser Gln Gly Val Leu Val Ile Ala Ala 85 90 95

Thr Gly Asn Asn Gly Ser Gly Ser Val Gly Tyr Pro Ala Arg Tyr Ala 100 105 110 Asn Ala Met Ala Val Gly Ala Thr Asp Gln Asn Asn Arg Arg Ala Asn 115 120 125

Phe Ser Gln Tyr Gly Thr Gly Ile Asp Ile Val Ala Pro Gly Val Asn 130 135 140

Val Gln Ser Thr Tyr Pro Gly Asn Arg Tyr Ala Ser Leu Asn Gly Thr 145 150 155 160

Ser Met Ala Thr Pro His Val Ala Gly Ala Ala Ala Leu Val Lys 165 170 175

<210> 268

<211> 193

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 268

Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly
1 5 10 15

His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asp Asn Ser Glu 20 25 30

Gly Val Leu Gly Val Ala Pro Asn Ala Asp Leu Tyr Ala Val Lys Val
35 40 45

Leu Gly Ala Ser Gly Ser Gly Ser Ile Ser Gly Ile Ala Gln Gly Leu 50 55 60

Glu Trp Ala Gly Glu Asn Gly Met His Ile Ala Asn Leu Ser Leu Gly 65 70 75 80

Ser Ser Ala Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Tyr Ala Thr 85 90 95

Ser Gln Gly Val Leu Val Ile Ala Ala Ser Gly Asn Ser Gly Ala Gly
100 105 110

Ser Val Gly Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala

115 120 125

Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly
130 135 140

Leu Asp Ile Val Ala Pro Gly Val Gly Val Gln Ser Thr Tyr Pro Gly
145 150 155 160

Asn Arg Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val 165 170 175

Ala Gly Val Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn 180 185 190

Val

<210> 269

<211> 193

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 269

Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly
1 10 15

His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile
20 25 30

Gly Val Leu Gly Val Ala Pro Asn Ala Asp Leu Tyr Ala Val Lys Val 35 40 45

Leu Gly Ala Asn Gly Ser Gly Ser Val Ser Gly Ile Ala Gln Gly Leu 50 55 60

Glu Trp Ala Ala Ala Asn Asn Met His Ile Ala Asn Met Ser Leu Gly 65 70 75 80

Ser Asp Ala Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Tyr Ala Thr 85 90 95 Ser Arg Gly Val Leu Val Ile Ala Ala Thr Gly Asn Asn Gly Ser Gly
100 105 110

Ser Val Gly Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala 115 120 125

Thr Asp Gln Asn Asn Arg Arg Ala Asn Phe Ser Gln Tyr Gly Thr Gly 130 135 140

Ile Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly 145 150 155 160

Asn Arg Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val 165 170 175

Ala Gly Val Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn 180 185 190

Val

<210> 270

<211> 193

<212> PRT

<213> Bacillus

<400> 270

Gly Ala Ser Phe Val Pro Gly Glu Pro Ser Thr Gln Asp Gly Asn Gly 1 5 10 15

His Gly Thr His Val Ala Gly Thr Ile Ala Ala Leu Asn Asn Ser Ile
20 25 30

Gly Val Leu Gly Val Ala Pro Ser Ala Glu Leu Tyr Ala Val Lys Val 35 40 45

Leu Gly Ala Ser Gly Ser Gly Ser Val Ser Ser Ile Ala Gln Gly Leu 50 55 60

Glu Trp Ala Gly Asn Asn Gly Met His Val Ala Asn Leu Ser Leu Gly 65 70 75 80

Ser Pro Ser Pro Ser Ala Thr Leu Glu Gln Ala Val Asn Ser Ala Thr 85 90 95

Ser Ile Ser Tyr Pro Ala Arg Tyr Ala Asn Ala Met Ala Val Gly Ala 115 120 125

Thr Asp Gln Asn Asn Asn Arg Ala Ser Phe Ser Gln Tyr Gly Ala Gly 130 135 140

Leu Asp Ile Val Ala Pro Gly Val Asn Val Gln Ser Thr Tyr Pro Gly 145 150 155 160

Ser Thr Tyr Ala Ser Leu Asn Gly Thr Ser Met Ala Thr Pro His Val 165 170 175

Ala Gly Ala Ala Leu Val Lys Gln Lys Asn Pro Ser Trp Ser Asn 180 185 190

Val